```
=> d his full

     (FILE 'HOME' ENTERED AT 12:13:42 ON 31 AUG 2006)

     FILE 'REGISTRY' ENTERED AT 12:13:50 ON 31 AUG 2006
L1            0 SEA ABB=ON  PLU=ON  (LI(L)SI(L)(NB OR TA OR W)(L)O(L)N)/E
                LS (L) 5/ELC.SUB
L2           18 SEA ABB=ON  PLU=ON  (LI(L)SI(L)(NB OR TA OR W)(L)O(L)N)/E
L3            7 SEA ABB=ON  PLU=ON  LI2O/MF
L4           48 SEA ABB=ON  PLU=ON  O2SI/MF
L5           29 SEA ABB=ON  PLU=ON  N2/MF
L6            4 SEA ABB=ON  PLU=ON  NB2O5/MF
L7            4 SEA ABB=ON  PLU=ON  O5TA/MF
L8           15 SEA ABB=ON  PLU=ON  O3W/MF

     FILE 'HCAPLUS' ENTERED AT 12:32:12 ON 31 AUG 2006
L9           19 SEA ABB=ON  PLU=ON  (L3 OR LITHIUM OXIDE OR LI2O OR
                DILITHIUM OXIDE) AND (L4 OR SILICA OR SILICON OXIDE OR
                SIO2) AND (L5 AND NITROGEN OR N2) AND (L6 OR NIOBIUM
                OXIDE OR NIOBIUM PENTOXIDE OR L7 OR TANTALUM OXIDE OR
                TA2O5 OR L8 OR TUNGSTEN OXIDE OR WO3)
L10           4 SEA ABB=ON  PLU=ON  L9 (L) ELECTROLYT?
L11           4 SEA ABB=ON  PLU=ON  L9 AND ELECTROLYT?
L12           7 SEA ABB=ON  PLU=ON  L9 AND ELECTROCHEM?/SC,SX
L13           7 SEA ABB=ON  PLU=ON  L10 OR L11 OR L12

     FILE 'REGISTRY' ENTERED AT 12:48:48 ON 31 AUG 2006
L14         244 SEA ABB=ON  PLU=ON  (LI(L)SI(L)(NB OR TA OR W)(L)O)/ELS

     FILE 'HCAPLUS' ENTERED AT 12:49:39 ON 31 AUG 2006
L15         124 SEA ABB=ON  PLU=ON  L14
L16           1 SEA ABB=ON  PLU=ON  L15 AND L9
L17           9 SEA ABB=ON  PLU=ON  L15 (L) ELECTROLYT?
L18          12 SEA ABB=ON  PLU=ON  L15 AND ELECTROLYT?
L19          12 SEA ABB=ON  PLU=ON  L16 OR L17 OR L18
L20          11 SEA ABB=ON  PLU=ON  L19 AND ELECTROCHEM?/SC,SX
L21          10 SEA ABB=ON  PLU=ON  L20 NOT L13


=> file reg
FILE 'REGISTRY' ENTERED AT 13:29:15 ON 31 AUG 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2006 American Chemical Society (ACS)

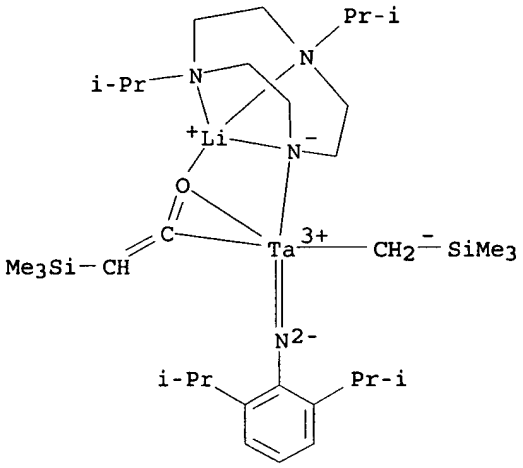

=> d l1 que stat
L1            0 SEA FILE=REGISTRY ABB=ON  PLU=ON  (LI(L)SI(L)(NB OR TA
                OR W)(L)O(L)N)/ELS (L) 5/ELC.SUB


=> d l2 que stat
L2           18 SEA FILE=REGISTRY ABB=ON  PLU=ON  (LI(L)SI(L)(NB OR TA
                OR W)(L)O(L)N)/ELS


=> d l2 1-18 ide

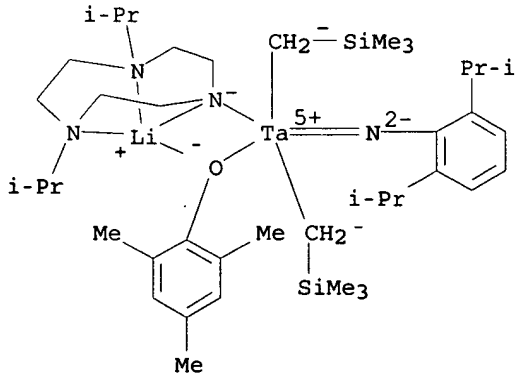
L2   ANSWER 1 OF 18  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   452057-31-7  REGISTRY
ED   Entered STN:  17 Sep 2002
CN   Lithium, [[2,6-bis(1-methylethyl)benzenaminato(2-
     )][(trimethylsilyl)methyl]tantalum][μ-[octahydro-1,4-bis(1-
     methylethyl)-1H-1,4,7-triazoninato-κN1,κN4,κN7:.ka
    ppa.N7]][μ-[(O,1-η)-(trimethylsilyl)ethenone-κO]]-
     (9CI)  (CA INDEX NAME)
```

MF **C33 H64 Li N4 O Si2 Ta**
CI CCS
SR CA
LC STN Files: CA, CAPLUS, CASREACT



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 2 OF 18 REGISTRY COPYRIGHT 2006 ACS on STN
RN 452057-27-1 REGISTRY
ED Entered STN: 17 Sep 2002
CN Lithium, [[2,6-bis(1-methylethyl)benzenaminato(2-)]bis[(trimethylsilyl)methyl]tantalum][μ-[octahydro-1,4-bis(1-methylethyl)-1H-1,4,7-triazoninato-κN1,κN4,κN7:.kappa.N7]][μ-(2,4,6-trimethylphenolato)]- (9CI) (CA INDEX NAME)
MF **C41 H76 Li N4 O Si2 Ta**
CI CCS
SR CA
LC STN Files: CA, CAPLUS, CASREACT



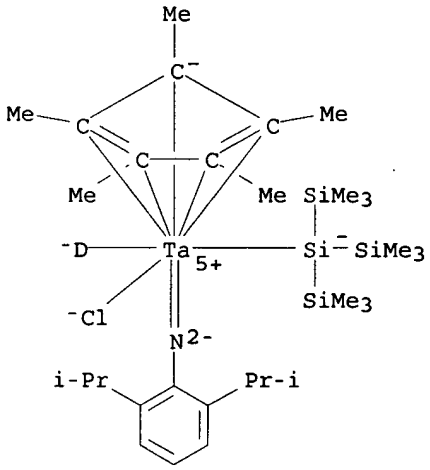
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 3 OF 18 REGISTRY COPYRIGHT 2006 ACS on STN
RN 449213-85-8 REGISTRY

ED Entered STN: 11 Sep 2002
CN Lithium(1+), tris(tetrahydrofuran)-, [2,6-bis(1-methylethyl)benzenaminato(2-)]chlorohydro-d-[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl][2,2,2-trimethyl-1,1-bis(trimethylsilyl)disilanyl]tantalate(1-) (9CI) (CA INDEX NAME)
MF **C31 H59 Cl D N Si4 Ta . C12 H24 Li O3**
SR CA
LC STN Files: CA, CAPLUS

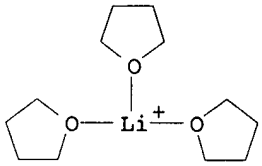
CM 1

CRN 449213-84-7
CMF C31 H59 Cl D N Si4 Ta
CCI CCS



CM 2

CRN 61915-36-4
CMF C12 H24 Li O3
CCI CCS



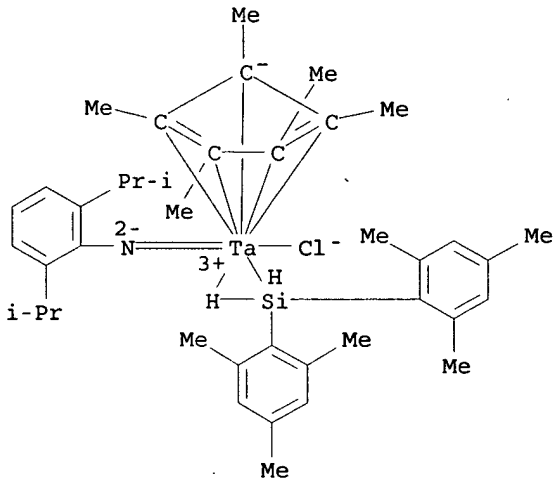
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 4 OF 18 REGISTRY COPYRIGHT 2006 ACS on STN
RN 449213-78-9 REGISTRY
ED Entered STN: 11 Sep 2002
CN Lithium(1+), tetrakis(tetrahydrofuran)-, (T-4)-, [2,6-bis(1-methylethyl)benzenaminato(2-)][bis(2,4,6-trimethylphenyl)silane-κH,κSi]chloro[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]tantalate(1-) (9CI) (CA INDEX NAME)
MF **C40 H56 Cl N Si Ta . C16 H32 Li O4**
SR CA

LC STN Files: CA, CAPLUS, CASREACT

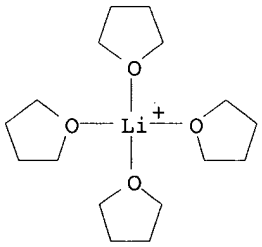
CM 1

CRN 449213-77-8
CMF C40 H56 Cl N Si Ta
CCI CCS



CM 2

CRN 48186-27-2
CMF C16 H32 Li O4
CCI CCS

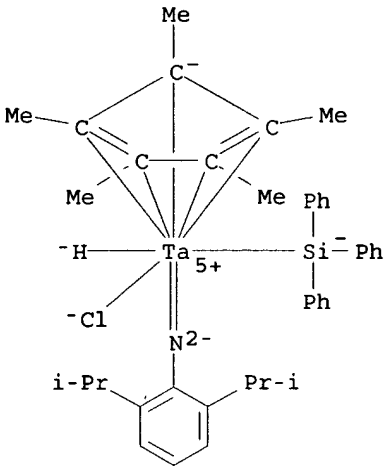


1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 5 OF 18 REGISTRY COPYRIGHT 2006 ACS on STN
RN 449213-75-6 REGISTRY
ED Entered STN: 11 Sep 2002
CN Lithium(1+), tris(tetrahydrofuran)-, [2,6-bis(1-methylethyl)benzenaminato(2-)]chlorohydro[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl](triphenylsilyl)tantalate(1-) (9CI) (CA INDEX NAME)
MF **C40 H48 Cl N Si Ta . C12 H24 Li O3**
SR CA
LC STN Files: CA, CAPLUS, CASREACT

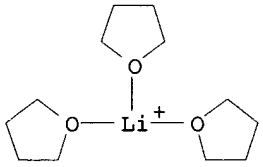
CM 1

CRN 449213-74-5
CMF C40 H48 Cl N Si Ta
CCI CCS



CM 2

CRN 61915-36-4
CMF C12 H24 Li O3
CCI CCS

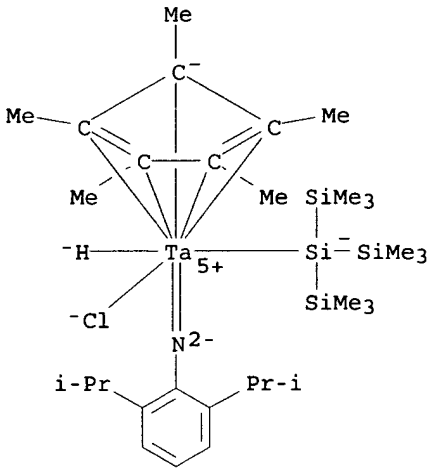


1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 6 OF 18 REGISTRY COPYRIGHT 2006 ACS on STN
RN 449213-61-0 REGISTRY
ED Entered STN: 11 Sep 2002
CN Lithium(1+), tris(tetrahydrofuran)-, [2,6-bis(1-methylethyl)benzenaminato(2-)]chlorohydro[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl][2,2,2-trimethyl-1,1-bis(trimethylsilyl)disilanyl]tantalate(1-) (9CI) (CA INDEX NAME)
MF **C31 H60 Cl N Si4 Ta . C12 H24 Li O3**
SR CA
LC STN Files: CA, CAPLUS, CASREACT

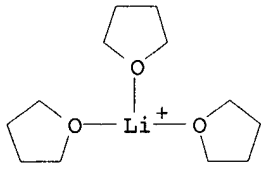
CM 1

CRN 449213-60-9
CMF C31 H60 Cl N Si4 Ta
CCI CCS



CM 2

CRN 61915-36-4
CMF C12 H24 Li O3
CCI CCS

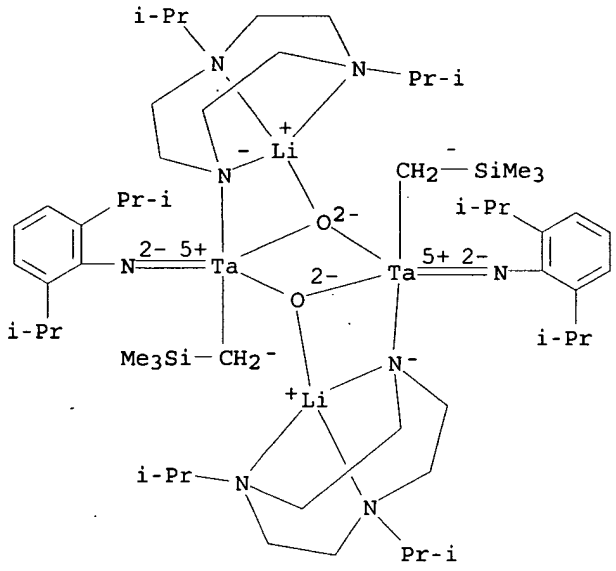


1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 7 OF 18 REGISTRY COPYRIGHT 2006 ACS on STN
RN 364732-20-7 REGISTRY
ED Entered STN: 26 Oct 2001
CN Lithium, bis[[2,6-bis(1-methylethyl)benzenaminato(2-)][(trimethylsilyl)methyl]tantalum]bis[μ-[octahydro-1,4-bis(1-methylethyl)-1H-1,4,7-triazoninato-κN1,κN4,κN7:.kappa.N7]]di-μ3-oxodi-, stereoisomer, compd. with benzene (1:2) (9CI) (CA INDEX NAME)
MF **C56 H108 Li2 N8 O2 Si2 Ta2 . 2 C6 H6**
SR CA
LC STN Files: CA, CAPLUS

CM 1

CRN 364636-13-5
CMF C56 H108 Li2 N8 O2 Si2 Ta2
CCI CCS

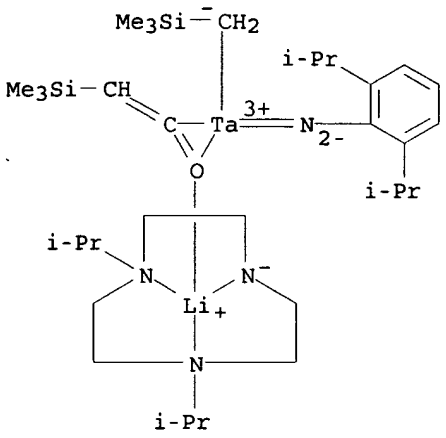


CM 2

CRN 71-43-2
CMF C6 H6

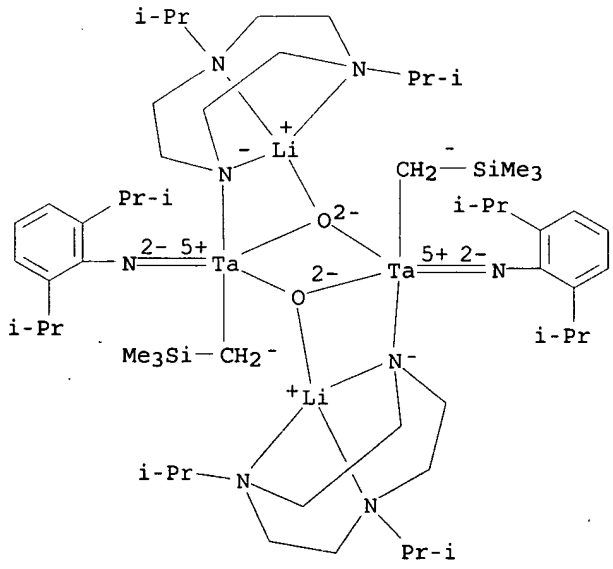
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 8 OF 18 REGISTRY COPYRIGHT 2006 ACS on STN
RN 364636-14-6 REGISTRY
ED Entered STN: 25 Oct 2001
CN Lithium, [[2,6-bis(1-methylethyl)benzenaminato(2-)][(trimethylsilyl)methyl]tantalum][octahydro-1,4-bis(1-methylethyl)-1H-1,4,7-triazoninato-κN1,κN4,κN7][μ-[(O,1-η)-(trimethylsilyl)ethenone-κO]]- (9CI) (CA INDEX NAME)
MF **C33 H64 Li N4 O Si2 Ta**
CI CCS
SR CA
LC STN Files: CA, CAPLUS, CASREACT



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 9 OF 18 REGISTRY COPYRIGHT 2006 ACS on STN
RN 364636-13-5 REGISTRY
ED Entered STN: 25 Oct 2001
CN Lithium, bis[[2,6-bis(1-methylethyl)benzenaminato(2-)][(trimethylsilyl)methyl]tantalum]bis[μ-[octahydro-1,4-bis(1-methylethyl)-1H-1,4,7-triazoninato-κN1,κN4,κN7:.kappa.N7]]di-μ3-oxodi-, stereoisomer (9CI) (CA INDEX NAME)
MF **C56 H108 Li2 N8 O2 Si2 Ta2**
CI CCS, COM
SR CA
LC STN Files: CA, CAPLUS, CASREACT



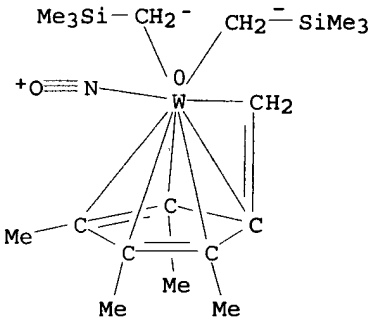
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 10 OF 18 REGISTRY COPYRIGHT 2006 ACS on STN

RN 199784-77-5 REGISTRY
ED Entered STN: 15 Jan 1998
CN Lithium(1+), tris(tetrahydrofuran)-, nitrosyl(η6-1,2,3,4-tetramethyl-5-methylene-1,3-cyclopentadiene)bis[(trimethylsilyl)methyl]tungstate(1-) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Tungstate(1-), nitrosyl(η6-1,2,3,4-tetramethyl-5-methylene-1,3-cyclopentadiene)bis[(trimethylsilyl)methyl]-, tris(tetrahydrofuran)lithium(1+) (9CI)
MF **C18 H36 N O Si2 W . C12 H24 Li O3**
SR CA
LC STN Files: CA, CAPLUS

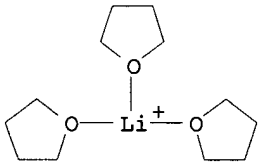
CM 1

CRN 199784-76-4
CMF C18 H36 N O Si2 W
CCI CCS



CM 2

CRN 61915-36-4
CMF C12 H24 Li O3
CCI CCS



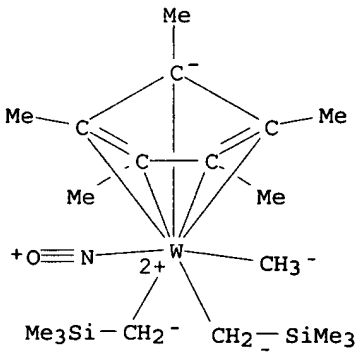
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 11 OF 18 REGISTRY COPYRIGHT 2006 ACS on STN
RN 199784-75-3 REGISTRY
ED Entered STN: 15 Jan 1998
CN Lithium(1+), tris(tetrahydrofuran)-, methylnitrosyl[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]bis[(trimethylsilyl)methyl]tungstate(1-) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Tungstate(1-), methylnitrosyl[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]bis[(trimethylsilyl)methyl]-, tris(tetrahydrofuran)lithium(1+) (9CI)
MF **C19 H40 N O Si2 W . C12 H24 Li O3**

SR CA
LC STN Files: CA, CAPLUS

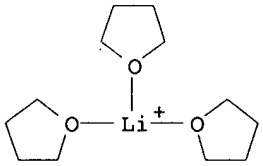
CM 1

CRN 199784-74-2
CMF C19 H40 N O Si2 W
CCI CCS



CM 2

CRN 61915-36-4
CMF C12 H24 Li O3
CCI CCS

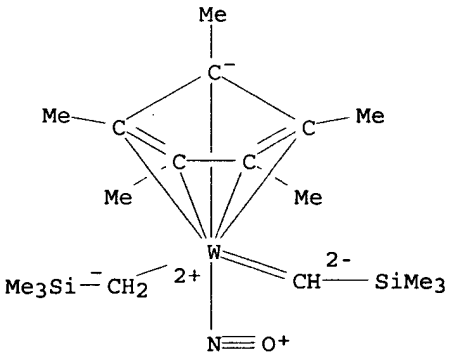


1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 12 OF 18 REGISTRY COPYRIGHT 2006 ACS on STN
RN 199784-73-1 REGISTRY
ED Entered STN: 15 Jan 1998
CN Lithium(1+), (tetrahydrofuran)-, nitrosyl[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl][(trimethylsilyl)methyl][(trimethylsilyl)methylene]tungstate(1-) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Tungstate(1-), nitrosyl[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl][(trimethylsilyl)methyl][(trimethylsilyl)methylene]-, (tetrahydrofuran)lithium(1+) (9CI)
MF **C18 H36 N O Si2 W . C4 H8 Li O**
SR CA
LC STN Files: CA, CAPLUS

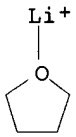
CM 1

CRN 199784-72-0
CMF C18 H36 N O Si2 W
CCI CCS



CM 2

CRN 53307-59-8
CMF C4 H8 Li O
CCI CCS



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

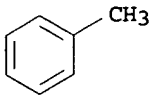
L2 ANSWER 13 OF 18 REGISTRY COPYRIGHT 2006 ACS on STN
RN 197301-33-0 REGISTRY
ED Entered STN: 14 Nov 1997
CN Lithium(1+), bis(pyridine)-, (OC-6-11)-tris[1,1,3,3-tetraphenyl-1,3-disiloxanediolato(2-)-κO1,κO3]tantalate(1-), compd. with methylbenzene and pyridine (2:1:2) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Tantalate(1-), tris[1,1,3,3-tetraphenyl-1,3-disiloxanediolato(2-)-κO1,κO3]-, (OC-6-11)-, bis(pyridine)lithium(1+), compd. with methylbenzene and pyridine (2:1:2) (9CI)
MF **C72 H60 O9 Si6 Ta . C10 H10 Li N2 . 1/2 C7 H8 . C5 H5 N**
SR CA
LC STN Files: CA, CAPLUS

CM 1

CRN 110-86-1
CMF C5 H5 N

CM 2

CRN 108-88-3
CMF C7 H8

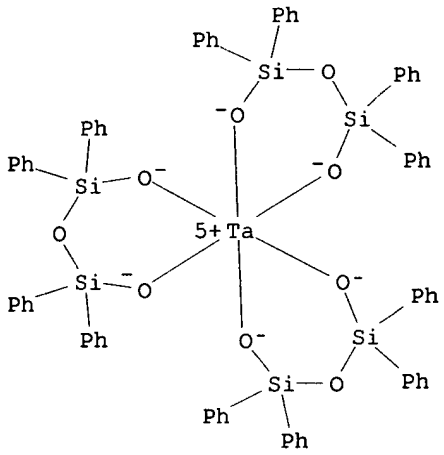


CM 3

CRN 197301-32-9
CMF C72 H60 O9 Si6 Ta . C10 H10 Li N2

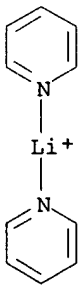
CM 4

CRN 197301-31-8
CMF C72 H60 O9 Si6 Ta
CCI CCS



CM 5

CRN 102566-56-3
CMF C10 H10 Li N2
CCI CCS

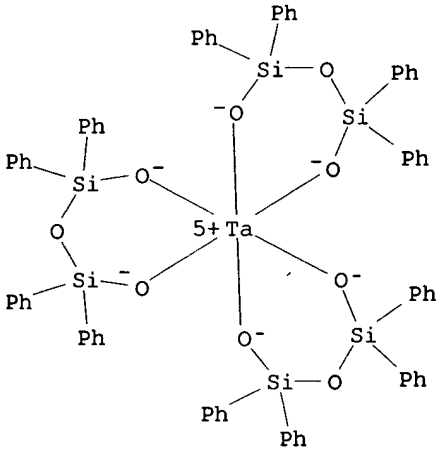


1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 14 OF 18 REGISTRY COPYRIGHT 2006 ACS on STN
RN 197301-32-9 REGISTRY
ED Entered STN: 14 Nov 1997
CN Lithium(1+), bis(pyridine)-, (OC-6-11)-tris[1,1,3,3-tetraphenyl-1,3-disiloxanediolato(2-)-κO1,κO3]tantalate(1-) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Tantalate(1-), tris[1,1,3,3-tetraphenyl-1,3-disiloxanediolato(2-)-κO1,κO3]-, (OC-6-11)-, bis(pyridine)lithium(1+) (9CI)
MF **C72 H60 O9 Si6 Ta . C10 H10 Li N2**
CI COM
SR CA
LC STN Files: CA, CAPLUS

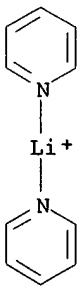
CM 1

CRN 197301-31-8
CMF C72 H60 O9 Si6 Ta
CCI CCS



CM 2

CRN 102566-56-3
CMF C10 H10 Li N2
CCI CCS

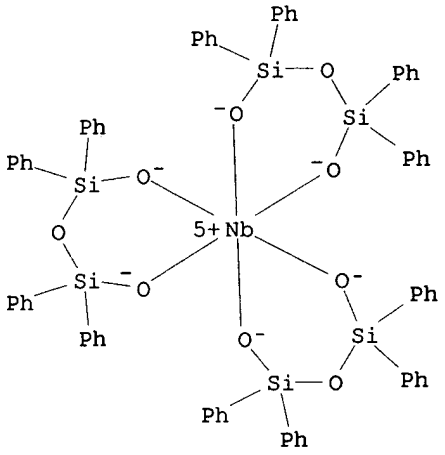


1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 15 OF 18 REGISTRY COPYRIGHT 2006 ACS on STN
RN 197301-30-7 REGISTRY
ED Entered STN: 14 Nov 1997
CN Lithium(1+), bis(pyridine)-, (OC-6-11)-tris[1,1,3,3-tetraphenyl-1,3-disiloxanediolato(2-)-κO1,κO3]niobate(1-) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Niobate(1-), tris[1,1,3,3-tetraphenyl-1,3-disiloxanediolato(2-)-κO1,κO3]-, (OC-6-11)-, bis(pyridine)lithium(1+) (9CI)
MF **C72 H60 Nb O9 Si6 . C10 H10 Li N2**
SR CA
LC STN Files: CA, CAPLUS

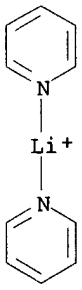
CM 1

CRN 197301-29-4
CMF C72 H60 Nb O9 Si6
CCI CCS



CM 2

CRN 102566-56-3
CMF C10 H10 Li N2
CCI CCS



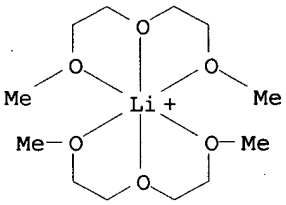
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 16 OF 18 REGISTRY COPYRIGHT 2006 ACS on STN
RN 190856-64-5 REGISTRY

ED Entered STN: 04 Jul 1997
CN Lithium(1+), bis[1,1'-(oxy-κO)bis[2-(methoxy-κO)ethane]]-, (OC-6-1'2)-, (OC-6-22)-pentacarbonyl[1,1,1-trimethyl-N-(trimethylsilyl)silanaminato]tungstate(1-) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Tungstate(1-), pentacarbonyl[1,1,1-trimethyl-N-(trimethylsilyl)silanaminato]-, (OC-6-22)-, (OC-6-1'2)-bis[1,1'-(oxy-κO)bis[2-(methoxy-κO)ethane]]lithium(1+) (9CI)
MF **C12 H28 Li O6 . C11 H18 N O5 Si2 W**
SR CA
LC STN Files: CA, CAPLUS

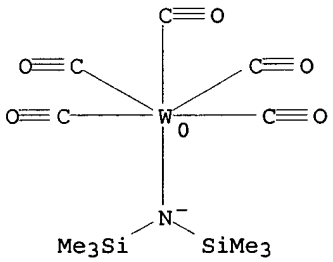
CM 1

CRN 190856-60-1
CMF C12 H28 Li O6
CCI CCS



CM 2

CRN 190773-20-7
CMF C11 H18 N O5 Si2 W
CCI CCS

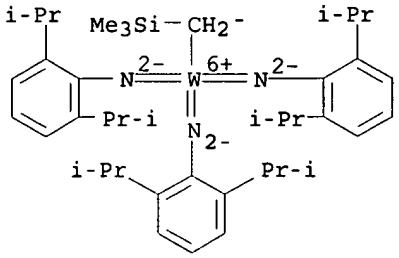


3 REFERENCES IN FILE CA (1907 TO DATE)
3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 17 OF 18 REGISTRY COPYRIGHT 2006 ACS on STN
RN 165270-13-3 REGISTRY
ED Entered STN: 26 Jul 1995
CN Lithium(1+), tetrakis(tetrahydrofuran)-, (T-4)-, (T-4)-tris[2,6-bis(1-methylethyl)benzenaminato(2-)][(trimethylsilyl)methyl]tungstate(1-) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Tungstate(1-), tris[2,6-bis(1-methylethyl)benzenaminato(2-)][(trimethylsilyl)methyl]-, (T-4)-, (T-4)-tetrakis(tetrahydrofuran)lithium(1+) (9CI)
MF **C40 H62 N3 Si W . C16 H32 Li O4**
SR CA
LC STN Files: CA, CAPLUS, CASREACT

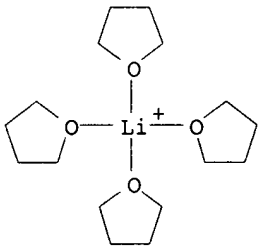
CM 1

CRN 165270-12-2
CMF C40 H62 N3 Si W
CCI CCS



CM 2

CRN 48186-27-2
CMF C16 H32 Li O4
CCI CCS

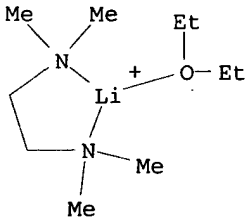


1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 18 OF 18 REGISTRY COPYRIGHT 2006 ACS on STN
RN 116309-08-1 REGISTRY
ED Entered STN: 10 Sep 1988
CN Lithium(1+), [1,1'-oxybis[ethane]](N,N,N',N'-tetramethyl-1,2-ethanediamine-N,N')-, stereoisomer of decacarbonyl[μ-[1,2-phenylenebis[1-oxo-2-(trimethylsilyl)-2,1-ethanediyl]]]ditungstate(2-) (2:1) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 1,2-Benzenediacetaldehyde, α,α'-bis(trimethylsilyl)-, tungsten complex, (R*,S*)-
CN 1,2-Ethanediamine, N,N,N',N'-tetramethyl-, lithium complex
CN Tungstate(2-), decacarbonyl[μ-[1,2-phenylenebis[1-oxo-2-(trimethylsilyl)-2,1-ethanediyl]]]di-, stereoisomer, bis[[1,1'-oxybis[ethane]](N,N,N',N'-tetramethyl-1,2-ethanediamine-N,N')lithium(1+)] (9CI)
MF **C26 H24 O12 Si2 W2 . 2 C10 H26 Li N2 O**
SR CA
LC STN Files: CA, CAPLUS, CASREACT

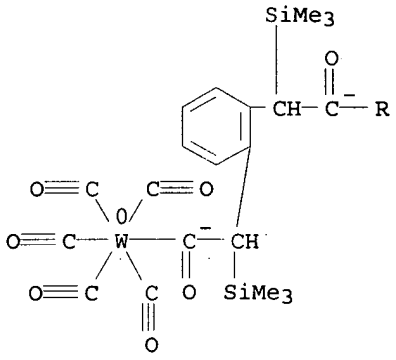
CM 1

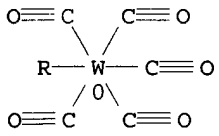
CRN 116309-07-0
CMF C10 H26 Li N2 O
CCI CCS



CM 2

CRN 116309-06-9
CMF C26 H24 O12 Si2 W2
CCI CCS





1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

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L3             7 SEA FILE=REGISTRY ABB=ON  PLU=ON  LI2O/MF
L4            48 SEA FILE=REGISTRY ABB=ON  PLU=ON  O2SI/MF
L5            29 SEA FILE=REGISTRY ABB=ON  PLU=ON  N2/MF
L6             4 SEA FILE=REGISTRY ABB=ON  PLU=ON  NB2O5/MF
L7             4 SEA FILE=REGISTRY ABB=ON  PLU=ON  O5TA/MF
L8            15 SEA FILE=REGISTRY ABB=ON  PLU=ON  O3W/MF
L9            19 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L3 OR LITHIUM OXIDE OR
                 LI2O OR DILITHIUM OXIDE) AND (L4 OR SILICA OR SILICON
                 OXIDE OR SI02) AND (L5 AND NITROGEN OR N2) AND (L6 OR
                 NIOBIUM OXIDE OR NIOBIUM PENTOXIDE OR L7 OR TANTALUM
                 OXIDE OR TA2O5 OR L8 OR TUNGSTEN OXIDE OR WO3)
L10            4 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L9 (L) ELECTROLYT?
L11            4 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L9 AND ELECTROLYT?
L12            7 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L9 AND ELECTROCHEM?/SC,S
                 X
L13            7 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L10 OR L11 OR L12
L14          244 SEA FILE=REGISTRY ABB=ON  PLU=ON  (LI(L)SI(L)(NB OR TA
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               OR W)(L)O)/ELS
L15          124 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L14
L16            1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L15 AND L9
L17            9 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L15 (L) ELECTROLYT?
L18           12 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L15 AND ELECTROLYT?
L19           12 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L16 OR L17 OR L18
L20           11 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L19 AND ELECTROCHEM?/SC,
                 SX
L21           10 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L20 NOT L13


=> file hcaplus
FILE 'HCAPLUS' ENTERED AT 13:30:27 ON 31 AUG 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)


=> d l21 1-10 ibib abs hitstr hitind

L21  ANSWER 1 OF 10  HCAPLUS  COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER:         2006:359170  HCAPLUS
DOCUMENT NUMBER:          144:394658
TITLE:                    Lithium phosphate solid oxide
                          electrolytes and solid batteries
INVENTOR(S):              Matsumura, Naoki; Ukaji, Masaya; Mino, Shinji;
                          Shibano, Yasuyuki
PATENT ASSIGNEE(S):       Matsushita Electric Industrial Co., Ltd., Japan
SOURCE:                   Jpn. Kokai Tokkyo Koho, 25 pp.
                          CODEN: JKXXAF
DOCUMENT TYPE:            Patent
LANGUAGE:                 Japanese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.           KIND   DATE        APPLICATION NO.        DATE
     ---------------      ----   --------    --------------------
     --------
     JP 2006108026         A2    20060420    JP 2004-296139
                                                                   200410
                                                                   08
PRIORITY APPLN. INFO.:                       JP 2004-296139
                                                                   200410
                                                                   08
```

AB **Electrolytes** having compn. formula LiaPbM(1-b)TcOd (M = Group 13 and 14 element; T = transition metal; a = 0.426-6.99; b = 0.01-0.99; c = 0.01-1; d = 1.7725-8) are claimed. Entirely solid batteries including the **electrolytes** are also claimed. Degrdn. of the **electrolytes** are prevented even under wet conditions.

IT **883121-02-6P**, Lithium tungsten phosphate silicate (Li3.5W0.01(PO4)0.5(SiO4)0.5) **883121-04-8P**, Lithium tungsten phosphate silicate (Li3.5W0.05(PO4)0.5(SiO4)0.5) **883121-06-0P**, Lithium tungsten phosphate silicate (Li3.5W0.1(PO4)0.5(SiO4)0.5) **883121-08-2P**, Lithium tungsten phosphate silicate (Li3.5W0.2(PO4)0.5(SiO4)0.5) **883121-10-6P**, Lithium tungsten phosphate silicate (Li3.5W0.5(PO4)0.5(SiO4)0.5) **883121-12-8P**, Lithium tungsten phosphate silicate (Li3.5W0.52(PO4)0.5(SiO4)0.5) **883121-14-0P**, Lithium tungsten phosphate silicate (Li3.5W0.6(PO4)0.5(SiO4)0.5) **883121-18-4P**, Lithium tantalum phosphate silicate (Li3.5Ta0.2(PO4)0.5(SiO4)0.5) **883121-26-4P**, Lithium tungsten phosphate silicate (Li3.2W0.2(PO4)0.8(SiO4)0.2) **883121-30-0P**, Lithium silicon tungsten oxide phosphate (Li2.97Si0.01W0.2O0.02(PO4)0.99)

883121-32-2P, Lithium silicon tungsten oxide phosphate (Li2.74Si0.1W0.2O0.22(PO4)0.9) **883121-34-4P** **883121-36-6P** **883121-38-8P** **883121-40-2P**, Lithium silicon tungsten oxide phosphate (Li0.43Si0.99W0.2O2.18(PO4)0.01) **883121-54-8P** **883121-56-0P** **883121-58-2P** **883121-60-6P** **883121-62-8P** **883121-64-0P** **883121-66-2P** **883121-68-4P** **883121-70-8P** **883121-72-0P** **883121-74-2P** **883121-76-4P** **883121-78-6P** **883121-80-0P** **883121-82-2P** **883121-84-4P** **883121-86-6P** **883121-94-6P**, Lithium tungsten phosphate silicate (Li3.6W0.3(PO4)0.4(SiO4)0.6) **883121-96-8P**, Lithium tungsten phosphate silicate (Li3.5W0.3(PO4)0.5(SiO4)0.5) **883121-98-0P**, Lithium tungsten phosphate silicate (Li3.4W0.3(PO4)0.6(SiO4)0.4) **883122-06-3P**, Lithium tantalum phosphate silicate (Li3.6Ta0.3(PO4)0.4(SiO4)0.6) **883122-08-5P**, Lithium tantalum phosphate silicate (Li3.5Ta0.3(PO4)0.5(SiO4)0.5) **883122-10-9P**, Lithium tantalum phosphate silicate (Li3.4Ta0.3(PO4)0.6(SiO4)0.4)
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(Group 13 and/or 14 element-contg. Li transition metal phosphate solid oxide **electrolytes** for all-solid lithium batteries)

RN 883121-02-6 HCAPLUS
CN Lithium tungsten phosphate silicate (Li3.5W0.01(PO4)0.5(SiO4)0.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4Si	0.5	17181-37-2
O4P	0.5	14265-44-2
W	0.01	7440-33-7
Li	3.5	7439-93-2

RN 883121-04-8 HCAPLUS
CN Lithium tungsten phosphate silicate (Li3.5W0.05(PO4)0.5(SiO4)0.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4Si	0.5	17181-37-2
O4P	0.5	14265-44-2
W	0.05	7440-33-7
Li	3.5	7439-93-2

RN 883121-06-0 HCAPLUS
CN Lithium tungsten phosphate silicate (Li3.5W0.1(PO4)0.5(SiO4)0.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4Si	0.5	17181-37-2
O4P	0.5	14265-44-2
W	0.1	7440-33-7
Li	3.5	7439-93-2

RN 883121-08-2 HCAPLUS
CN Lithium tungsten phosphate silicate (Li3.5W0.2(PO4)0.5(SiO4)0.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component

		Registry Number
O4Si	0.5	17181-37-2
O4P	0.5	14265-44-2
W	0.2	7440-33-7
Li	3.5	7439-93-2

RN 883121-10-6 HCAPLUS
CN Lithium tungsten phosphate silicate (Li3.5W0.5(PO4)0.5(SiO4)0.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4Si	0.5	17181-37-2
O4P	0.5	14265-44-2
W	0.5	7440-33-7
Li	3.5	7439-93-2

RN 883121-12-8 HCAPLUS
CN Lithium tungsten phosphate silicate (Li3.5W0.52(PO4)0.5(SiO4)0.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4Si	0.5	17181-37-2
O4P	0.5	14265-44-2
W	0.52	7440-33-7
Li	3.5	7439-93-2

RN 883121-14-0 HCAPLUS
CN Lithium tungsten phosphate silicate (Li3.5W0.6(PO4)0.5(SiO4)0.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4Si	0.5	17181-37-2
O4P	0.5	14265-44-2
W	0.6	7440-33-7
Li	3.5	7439-93-2

RN 883121-18-4 HCAPLUS
CN Lithium tantalum phosphate silicate (Li3.5Ta0.2(PO4)0.5(SiO4)0.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4Si	0.5	17181-37-2
O4P	0.5	14265-44-2
Ta	0.2	7440-25-7
Li	3.5	7439-93-2

RN 883121-26-4 HCAPLUS
CN Lithium tungsten phosphate silicate (Li3.2W0.2(PO4)0.8(SiO4)0.2) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4Si	0.2	17181-37-2
O4P	0.8	14265-44-2
W	0.2	7440-33-7
Li	3.2	7439-93-2

RN 883121-30-0 HCAPLUS
CN Lithium silicon tungsten oxide phosphate
(Li2.97Si0.01W0.2O0.02(PO4)0.99) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.02	17778-80-2
O4P	0.99	14265-44-2
W	0.2	7440-33-7
Si	0.01	7440-21-3
Li	2.97	7439-93-2

RN 883121-32-2 HCAPLUS
CN Lithium silicon tungsten oxide phosphate
(Li2.74Si0.1W0.2O0.22(PO4)0.9) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.22	17778-80-2
O4P	0.9	14265-44-2
W	0.2	7440-33-7
Si	0.1	7440-21-3
Li	2.74	7439-93-2

RN 883121-34-4 HCAPLUS
CN Lithium tungsten metaphosphate oxide silicate
(Li2.22W0.2(PO3)0.7O0.16(SiO4)0.3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.16	17778-80-2
O4Si	0.3	17181-37-2
O3P	0.7	15389-19-2
W	0.2	7440-33-7
Li	2.22	7439-93-2

RN 883121-36-6 HCAPLUS
CN Lithium tungsten metaphosphate oxide silicate
(Li1.18W0.2(PO3)0.3O0.09(Si2O5)0.35) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O5Si2	0.35	20328-07-8
O	0.09	17778-80-2
O3P	0.3	15389-19-2
W	0.2	7440-33-7
Li	1.18	7439-93-2

RN 883121-38-8 HCAPLUS
CN Lithium phosphorus tungsten oxide silicate
(Li0.66P0.1W0.2O0.13(Si2O5)0.45) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O5Si2	0.45	20328-07-8
O	0.13	17778-80-2
P	0.1	7723-14-0
W	0.2	7440-33-7
Li	0.66	7439-93-2

RN 883121-40-2 HCAPLUS
CN Lithium silicon tungsten oxide phosphate
(Li0.43Si0.99W0.2O2.18(PO4)0.01) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2.18	17778-80-2
O4P	0.01	14265-44-2
W	0.2	7440-33-7
Si	0.99	7440-21-3
Li	0.43	7439-93-2

RN 883121-54-8 HCAPLUS
CN Lithium tungsten oxide phosphate silicate
(Li3.5W0.01O0.03(PO4)0.5(SiO4)0.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.03	17778-80-2
O4Si	0.5	17181-37-2
O4P	0.5	14265-44-2
W	0.01	7440-33-7
Li	3.5	7439-93-2

RN 883121-56-0 HCAPLUS
CN Lithium tungsten oxide phosphate silicate
(Li3.5W0.1O0.3(PO4)0.5(SiO4)0.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.3	17778-80-2
O4Si	0.5	17181-37-2
O4P	0.5	14265-44-2
W	0.1	7440-33-7
Li	3.5	7439-93-2

RN 883121-58-2 HCAPLUS
CN Lithium tungsten oxide phosphate silicate
(Li3.5W0.5O0.9(PO4)0.5(SiO4)0.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O4Si	0.5	17181-37-2
O4P	0.5	14265-44-2
W	0.5	7440-33-7
Li	3.5	7439-93-2

RN 883121-60-6 HCAPLUS
CN Lithium tungsten oxide phosphate silicate
(Li3.5W0.5O1.5(PO4)0.5(SiO4)0.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1.5	17778-80-2
O4Si	0.5	17181-37-2
O4P	0.5	14265-44-2
W	0.5	7440-33-7
Li	3.5	7439-93-2

RN 883121-62-8 HCAPLUS

CN Lithium tungsten oxide phosphate silicate
(Li3.5W0.7O2.1(PO4)0.5(SiO4)0.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2.1	17778-80-2
O4Si	0.5	17181-37-2
O4P	0.5	14265-44-2
W	0.7	7440-33-7
Li	3.5	7439-93-2

RN 883121-64-0 HCAPLUS
CN Lithium tungsten oxide phosphate silicate
(Li3.5WO3(PO4)0.5(SiO4)0.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
O4Si	0.5	17181-37-2
O4P	0.5	14265-44-2
W	1	7440-33-7
Li	3.5	7439-93-2

RN 883121-66-2 HCAPLUS
CN Lithium tungsten oxide phosphate silicate
(Li3.01W0.01O0.03(PO4)0.99(SiO4)0.01) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.03	17778-80-2
O4Si	0.01	17181-37-2
O4P	0.99	14265-44-2
W	0.01	7440-33-7
Li	3.01	7439-93-2

RN 883121-68-4 HCAPLUS
CN Lithium tungsten oxide phosphate silicate
(Li3.01W0.1O0.3(PO4)0.99(SiO4)0.01) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.3	17778-80-2
O4Si	0.01	17181-37-2
O4P	0.99	14265-44-2
W	0.1	7440-33-7
Li	3.01	7439-93-2

RN 883121-70-8 HCAPLUS
CN Lithium tungsten oxide phosphate silicate
(Li3.01W0.5O1.5(PO4)0.99(SiO4)0.01) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1.5	17778-80-2
O4Si	0.01	17181-37-2
O4P	0.99	14265-44-2
W	0.5	7440-33-7
Li	3.01	7439-93-2

RN 883121-72-0 HCAPLUS
CN Lithium tungsten oxide phosphate silicate

(Li3.01W0.702.1(PO4)0.99(SiO4)0.01) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2.1	17778-80-2
O4Si	0.01	17181-37-2
O4P	0.99	14265-44-2
W	0.7	7440-33-7
Li	3.01	7439-93-2

RN 883121-74-2 HCAPLUS
CN Lithium tungsten oxide phosphate silicate
(Li3.01WO3(PO4)0.99(SiO4)0.01) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
O4Si	0.01	17181-37-2
O4P	0.99	14265-44-2
W	1	7440-33-7
Li	3.01	7439-93-2

RN 883121-76-4 HCAPLUS
CN Lithium tantalum oxide phosphate silicate
(Li4.02Ta0.0100.04(PO4)0.01(SiO4)0.99) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.04	17778-80-2
O4Si	0.99	17181-37-2
O4P	0.01	14265-44-2
Ta	0.01	7440-25-7
Li	4.02	7439-93-2

RN 883121-78-6 HCAPLUS
CN Lithium tantalum oxide phosphate silicate
(Li4.29Ta0.100.4(PO4)0.01(SiO4)0.99) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.4	17778-80-2
O4Si	0.99	17181-37-2
O4P	0.01	14265-44-2
Ta	0.1	7440-25-7
Li	4.29	7439-93-2

RN 883121-80-0 HCAPLUS
CN Lithium tantalum oxide phosphate silicate
(Li4.89Ta0.301.2(PO4)0.01(SiO4)0.99) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1.2	17778-80-2
O4Si	0.99	17181-37-2
O4P	0.01	14265-44-2
Ta	0.3	7440-25-7
Li	4.89	7439-93-2

RN 883121-82-2 HCAPLUS
CN Lithium tantalum oxide phosphate silicate
(Li5.49Ta0.502(PO4)0.01(SiO4)0.99) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2	17778-80-2
O4Si	0.99	17181-37-2
O4P	0.01	14265-44-2
Ta	0.5	7440-25-7
Li	5.49	7439-93-2

RN 883121-84-4 HCAPLUS
CN Lithium tantalum oxide phosphate silicate (Li6.69Ta0.9O3.6(PO4)0.01(SiO4)0.99) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.6	17778-80-2
O4Si	0.99	17181-37-2
O4P	0.01	14265-44-2
Ta	0.9	7440-25-7
Li	6.69	7439-93-2

RN 883121-86-6 HCAPLUS
CN Lithium tantalum oxide phosphate silicate (Li6.99TaO4(PO4)0.01(SiO4)0.99) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4	17778-80-2
O4Si	0.99	17181-37-2
O4P	0.01	14265-44-2
Ta	1	7440-25-7
Li	6.99	7439-93-2

RN 883121-94-6 HCAPLUS
CN Lithium tungsten phosphate silicate (Li3.6W0.3(PO4)0.4(SiO4)0.6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4Si	0.6	17181-37-2
O4P	0.4	14265-44-2
W	0.3	7440-33-7
Li	3.6	7439-93-2

RN 883121-96-8 HCAPLUS
CN Lithium tungsten phosphate silicate (Li3.5W0.3(PO4)0.5(SiO4)0.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4Si	0.5	17181-37-2
O4P	0.5	14265-44-2
W	0.3	7440-33-7
Li	3.5	7439-93-2

RN 883121-98-0 HCAPLUS
CN Lithium tungsten phosphate silicate (Li3.4W0.3(PO4)0.6(SiO4)0.4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number

O4Si	0.4	17181-37-2
O4P	0.6	14265-44-2
W	0.3	7440-33-7
Li	3.4	7439-93-2

RN 883122-06-3 HCAPLUS
CN Lithium tantalum phosphate silicate (Li3.6Ta0.3(PO4)0.4(SiO4)0.6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4Si	0.6	17181-37-2
O4P	0.4	14265-44-2
Ta	0.3	7440-25-7
Li	3.6	7439-93-2

RN 883122-08-5 HCAPLUS
CN Lithium tantalum phosphate silicate (Li3.5Ta0.3(PO4)0.5(SiO4)0.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4Si	0.5	17181-37-2
O4P	0.5	14265-44-2
Ta	0.3	7440-25-7
Li	3.5	7439-93-2

RN 883122-10-9 HCAPLUS
CN Lithium tantalum phosphate silicate (Li3.4Ta0.3(PO4)0.6(SiO4)0.4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4Si	0.4	17181-37-2
O4P	0.6	14265-44-2
Ta	0.3	7440-25-7
Li	3.4	7439-93-2

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST lithium transition metal phosphate battery **electrolyte**; solid **electrolyte** lithium battery
IT Battery **electrolytes**
(Group 13 and/or 14 element-contg. Li transition metal phosphate solid oxide **electrolytes** for all-solid lithium batteries)
IT Secondary batteries
(lithium; Group 13 and/or 14 element-contg. Li transition metal phosphate solid oxide **electrolytes** for all-solid lithium batteries)
IT **883121-02-6P**, Lithium tungsten phosphate silicate (Li3.5W0.01(PO4)0.5(SiO4)0.5) **883121-04-8P**, Lithium tungsten phosphate silicate (Li3.5W0.05(PO4)0.5(SiO4)0.5) **883121-06-0P**, Lithium tungsten phosphate silicate (Li3.5W0.1(PO4)0.5(SiO4)0.5) **883121-08-2P**, Lithium tungsten phosphate silicate (Li3.5W0.2(PO4)0.5(SiO4)0.5) **883121-10-6P**, Lithium tungsten phosphate silicate (Li3.5W0.5(PO4)0.5(SiO4)0.5) **883121-12-8P**, Lithium tungsten phosphate silicate (Li3.5W0.52(PO4)0.5(SiO4)0.5) **883121-14-0P**, Lithium tungsten phosphate silicate (Li3.5W0.6(PO4)0.5(SiO4)0.5) 883121-16-2P, Lithium molybdenum phosphate silicate (Li3.5Mo0.2(PO4)0.5(SiO4)0.5)

883121-18-4P, Lithium tantalum phosphate silicate (Li3.5Ta0.2(PO4)0.5(SiO4)0.5) 883121-20-8P, Lithium tungsten borate phosphate (Li2.6W0.2(BO2)0.2(PO4)0.8) 883121-22-0P 883121-24-2P, Gallium lithium tungsten oxide phosphate (Ga0.2Li2.6W0.2O0.4(PO4)0.8) **883121-26-4P**, Lithium tungsten phosphate silicate (Li3.2W0.2(PO4)0.8(SiO4)0.2) 883121-28-6P **883121-30-0P**, Lithium silicon tungsten oxide phosphate (Li2.97Si0.01W0.2O0.02(PO4)0.99) **883121-32-2P**, Lithium silicon tungsten oxide phosphate (Li2.74Si0.1W0.2O0.22(PO4)0.9) **883121-34-4P** **883121-36-6P 883121-38-8P 883121-40-2P**, Lithium silicon tungsten oxide phosphate (Li0.43Si0.99W0.2O2.18(PO4)0.01) 883121-42-4P, Lithium tungsten borate phosphate (Li2.98W0.2(BO2)0.01(PO4)0.99) 883121-44-6P, Boron lithium tungsten oxide phosphate (B0.1Li2.75W0.2O0.18(PO4)0.9) 883121-46-8P 883121-48-0P 883121-50-4P, Lithium phosphorus tungsten borate oxide (Li0.75P0.1W0.2(BO2)0.9O0.18) 883121-52-6P, Boron lithium tungsten oxide phosphate (B0.99Li0.52W0.2O1.37(PO4)0.1) **883121-54-8P 883121-56-0P 883121-58-2P** **883121-60-6P 883121-62-8P 883121-64-0P** **883121-66-2P 883121-68-4P 883121-70-8P** **883121-72-0P 883121-74-2P 883121-76-4P** **883121-78-6P 883121-80-0P 883121-82-2P** **883121-84-4P 883121-86-6P 883121-94-6P**, Lithium tungsten phosphate silicate (Li3.6W0.3(PO4)0.4(SiO4)0.6) **883121-96-8P**, Lithium tungsten phosphate silicate (Li3.5W0.3(PO4)0.5(SiO4)0.5) **883121-98-0P**, Lithium tungsten phosphate silicate (Li3.4W0.3(PO4)0.6(SiO4)0.4) 883122-00-7P, Lithium molybdenum phosphate silicate (Li3.6Mo0.3(PO4)0.4(SiO4)0.6) 883122-02-9P, Lithium molybdenum phosphate silicate (Li3.5Mo0.3(PO4)0.5(SiO4)0.5) 883122-04-1P, Lithium molybdenum phosphate silicate (Li3.4Mo0.3(PO4)0.6(SiO4)0.4) **883122-06-3P**, Lithium tantalum phosphate silicate (Li3.6Ta0.3(PO4)0.4(SiO4)0.6) **883122-08-5P**, Lithium tantalum phosphate silicate (Li3.5Ta0.3(PO4)0.5(SiO4)0.5) **883122-10-9P**, Lithium tantalum phosphate silicate (Li3.4Ta0.3(PO4)0.6(SiO4)0.4)

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(Group 13 and/or 14 element-contg. Li transition metal phosphate solid oxide **electrolytes** for all-solid lithium batteries)

L21 ANSWER 2 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:103179 HCAPLUS
DOCUMENT NUMBER: 143:462944
TITLE: Application of silicotungstate lithium in polymer **electrolyte**
AUTHOR(S): Li, Zhao-hui; Su, Guang-yao; Gao, De-shu; Wang, Xia-yu; Li, Xiao-ping
CORPORATE SOURCE: College of Chemistry, Xiangtan University, Xiangtan Hunan, 411105, Peop. Rep. China
SOURCE: Dianyuan Jishu (2004), 28(12), 743-747
CODEN: DIJIFT; ISSN: 1002-087X
PUBLISHER: Dianyuan Jishu Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

AB The porous poly (vinylidenefluoride-co-hexafluoropropylene)[P(VDF-HFP)] membranes, which doped with various amts. of silicotungstate lithium (Li4SiW12O40), were prepd. by liq.-liq. extn. in this paper. The polymer films possessed the ionic cond. of 10-4 S·cm-1 after absorbing propylene carbonate (PC). From the results of DSC anal. for polymer films, it was found that the crystallinity of them decreased with the increase of amt. of Li4SiW12O40 doping polymer matrixes. The ionic cond. of polymer **electrolytes** equaled

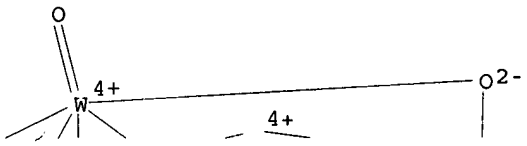
3.56 + 10-4 S·cm-1 when the mass fraction of silicotungstate lithium was 8.5% in polymer film. The lithium ions transference no., which was measured by the method of combination of AC impedance with DC polarization, decreased with increase of the mass fraction of Li4SiW12O40 in the porous polymer film. There are hydrogen bonds and coordination between silicotungstate lithium and P(VDF-HFP)'s mol. chains from the anal. of FTIR spectrum for polymer film.

IT **84259-22-3**, Lithium tungstosilicate (Li4SiW12O40)
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(application of lithium silicotungstate in polymer **electrolyte**)

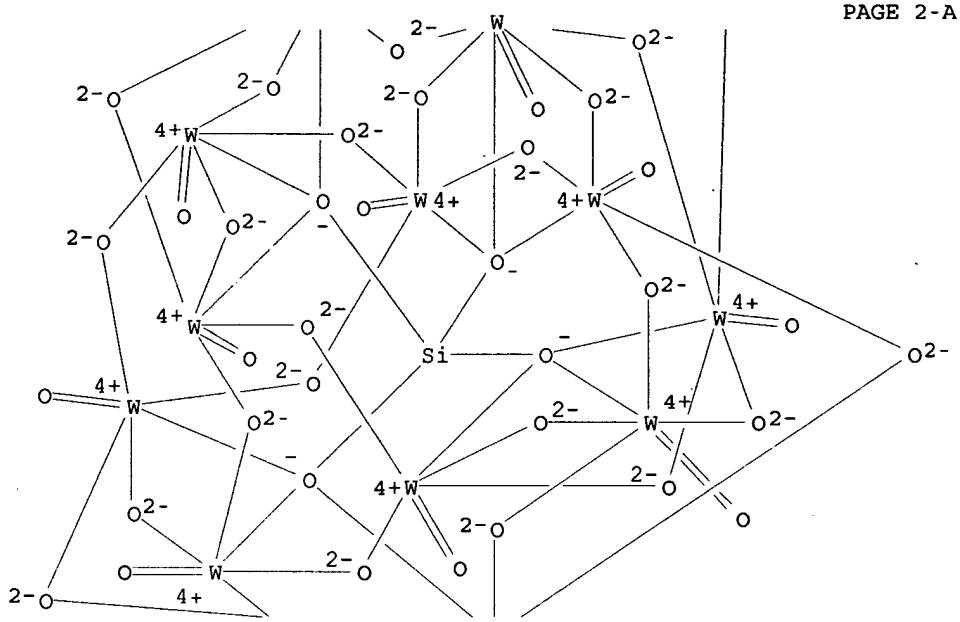
RN 84259-22-3 HCAPLUS

CN Tungstate(4-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododeca-, tetralithium (9CI) (CA INDEX NAME)

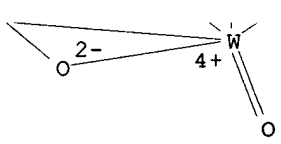
PAGE 1-A



PAGE 2-A



PAGE 3-A



●4 Li^+

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 35, 49
ST lithium silicotungstate polymer **electrolyte**
IT Ionic conductivity
Polymer **electrolytes**
(application of lithium silicotungstate in polymer **electrolyte**)
IT Heteropoly acids
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(salts; application of lithium silicotungstate in polymer **electrolyte**)
IT 108-32-7, Propylene carbonate 9011-17-0 **84259-22-3**, Lithium tungstosilicate ($Li_4SiW_{12}O_{40}$)
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(application of lithium silicotungstate in polymer **electrolyte**)

L21 ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:632469 HCAPLUS
DOCUMENT NUMBER: 141:176832
TITLE: Nonaqueous **electrolyte** lithium ion

secondary battery containing lithium-based composite metal oxide for improved discharge capacity and thermal stability

INVENTOR(S): Kubo, Koichi
PATENT ASSIGNEE(S): Toshiba Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004220801	A2	20040805	JP 2003-3291	20030109

PRIORITY APPLN. INFO.: JP 2003-3291 20030109

AB Disclosed is the nonaq. **electrolyte** lithium ion secondary battery comprising (a) a pos. electrode contg. a metal oxide Li2-xM1-yM'yXzAO4 (M = Ti, Nb, etc.; M' = V, Cr, Mn, etc.; X = O, F; A = Si, Ge, P, S; 0≤x≤2; 0≤y≤0.5; and 0.5≤z≤1.5) having the tetragonal crystal structure, (b) a neg. electrode, and (c) a nonaq. **electrolyte.**

IT **732298-68-9**, Lithium tungsten oxide silicate (Li2WO(SiO4))
RL: DEV (Device component use); USES (Uses)
(pos. electrode of nonaq. **electrolyte** lithium ion secondary battery)
RN 732298-68-9 HCAPLUS
CN Lithium tungsten oxide silicate (Li2WO(SiO4)) (9CI) (CA INDEX NAME)

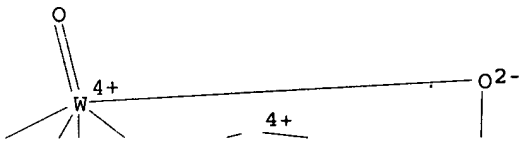
Component	Ratio	Component Registry Number
O	1	17778-80-2
O4Si	1	17181-37-2
W	1	7440-33-7
Li	2	7439-93-2

IC ICM H01M004-58
ICS H01M004-02; H01M010-40
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST nonaq **electrolyte** lithium ion secondary battery; metal oxide composite lithium
IT Secondary batteries
(lithium; pos. electrode of nonaq. **electrolyte** lithium ion secondary battery)
IT Battery electrodes
(pos. electrode of nonaq. **electrolyte** lithium ion secondary battery)
IT 530740-14-8, Molybdenum oxide phosphate (Mo2O3(PO4)2) 732298-51-0, Lithium molybdenum oxide phosphate (Li2MoO(PO4)) 732298-52-1, Lithium niobium oxide phosphate (Li2NbO(PO4)) 732298-53-2, Lithium tantalum oxide phosphate (Li2TaO(PO4)) 732298-54-3, Lithium tungsten oxide phosphate (Li2WO(PO4)) 732298-55-4, Iron lithium molybdenum oxide phosphate (Fe0.33Li2Mo0.67O(PO4)) 732298-56-5, Germanium lithium molybdenum oxide (GeLi2MoO5) 732298-58-7 732298-59-8, Iron lithium tantalum fluoride phosphate (Fe0.5Li2Ta0.5F(PO4)) 732298-60-1 732298-61-2 732298-62-3 732298-63-4, Lithium titanium oxide sulfate (Li2TiO(SO4)) 732298-64-5, Lithium titanium vanadium oxide sulfate

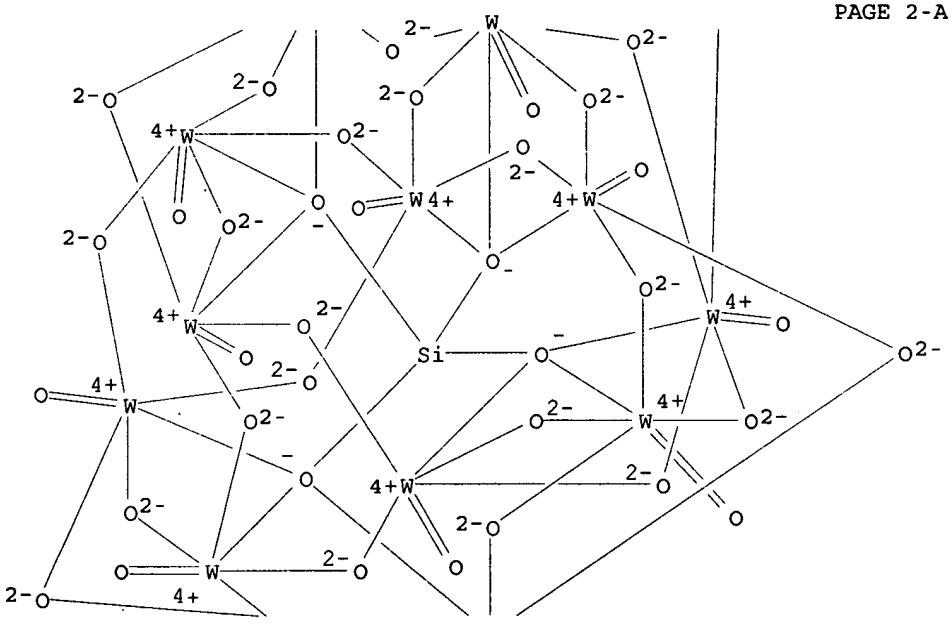
(Li2Ti0.5V0.5O(SO4)) 732298-65-6, Lithium niobium vanadium oxide sulfate (Li2Nb0.5V0.5O(SO4)) 732298-66-7, Lithium molybdenum oxide phosphate (Li2MoO1.5(PO4)) 732298-67-8, Lithium titanium oxide phosphate (Li2TiO0.5(PO4)) **732298-68-9**, Lithium tungsten oxide silicate (Li2WO(SiO4))
RL: DEV (Device component use); USES (Uses)
(pos. electrode of nonaq. **electrolyte** lithium ion secondary battery)

L21 ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:143909 HCAPLUS
DOCUMENT NUMBER: 140:425989
TITLE: Syntheses and application of all-lithium salts of heteropolyacid as **electrolyte** of lithium-ion battery
AUTHOR(S): Chen, Ya-guang; Wang, Cun-guo; Zhang, Xi-yan; Xie, De-min; Wang, Rong-shun
CORPORATE SOURCE: Faculty of Chemistry, Northeast Normal University, Changchun, 130024, Peop. Rep. China
SOURCE: Chemical Research in Chinese Universities (2004), 20(1), 77-80
CODEN: CRCUED; ISSN: 1005-9040
PUBLISHER: Higher Education Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The all-lithium salts of heteropoly acid LixXM12O40 (HPA-Li) (X=P, Si; M=Mo, W) were obtained via ion exchange and characterized by means of IR and UV spectroscopies, TG and elemental analyses. The cond. of the **electrolytic** soln. consisting of Li3PW12O40 and PC/DME mixing solvent (1/2.5, vol. ration) is up to 7.2+10-2 S/cm, being higher than that of LiClO4 as the **electrolyte.** The all-lithium salts were used as **electrolytes** in secondary lithium-ion batteries. The discharge capacity of the PAS/Li batteries with Li3PW12O40 **electrolyte** solns. reaches to 148 (mA · h)/g and the cyclic life is up to 380 times; much better than those of commercialized products with LiClO4 and LiAsF6 as **electrolytes.**
IT **692729-69-4P**
RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); PROC (Process); USES (Uses)
(of all-lithium salts of heteropolyacid as **electrolyte** of lithium-ion battery)
RN 692729-69-4 HCAPLUS
CN Tungstate(4-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododeca-, tetralithium, tridecahydrate (9CI) (CA INDEX NAME)

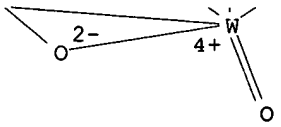
PAGE 1-A



PAGE 2-A



PAGE 3-A



●4 Li+

●13 H_2O

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 73, 76, 78
ST lithium salt heteropolyacid **electrolyte** secondary battery
IT Heteropoly acids
RL: NUU (Other use, unclassified); USES (Uses)
(lithium salts; syntheses and application of all-lithium salts of heteropolyacid as **electrolyte** of lithium-ion battery)
IT Secondary batteries
(lithium; syntheses and application of all-lithium salts of heteropolyacid as **electrolyte** of lithium-ion battery)
IT Electric conductivity
(of all-lithium salts of heteropolyacid as **electrolyte** of lithium-ion battery)
IT Electric capacitance
(of lithium-ion battery with of all-lithium salts of heteropolyacid as **electrolyte** with PC/DME)
IT **Electrolytes**
(syntheses and application of all-lithium salts of heteropolyacid as **electrolyte** of lithium-ion battery)
IT Ion exchange
(syntheses of all-lithium salts of heteropolyacid as **electrolyte** of lithium-ion battery, by)
IT Heteropoly acids
RL: NUU (Other use, unclassified); USES (Uses)
(tungstophosphoric, lithium salts; syntheses and application of all-lithium salts of heteropolyacid as **electrolyte** of lithium-ion battery)
IT Heteropoly acids
RL: NUU (Other use, unclassified); USES (Uses)
(tungstosilicic, lithium salts; syntheses and application of all-lithium salts of heteropolyacid as **electrolyte** of lithium-ion battery)
IT 692729-67-2P
RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); PROC (Process); USES (Uses)
(all-lithium salts of heteropolyacid as **electrolyte** of lithium-ion battery, by)
IT 108-32-7, Propylene carbonate 110-71-4
RL: NUU (Other use, unclassified); USES (Uses)
(elec. capacitance of lithium-ion battery with of all-lithium salts of heteropolyacid as **electrolyte** with PC/DME)
IT 11104-88-4, Molybdophosphoric acid 11104-89-5, Molybdosilicic acid
RL: NUU (Other use, unclassified); USES (Uses)
(lithium salts; syntheses and application of all-lithium salts of heteropolyacid as **electrolyte** of lithium-ion battery)

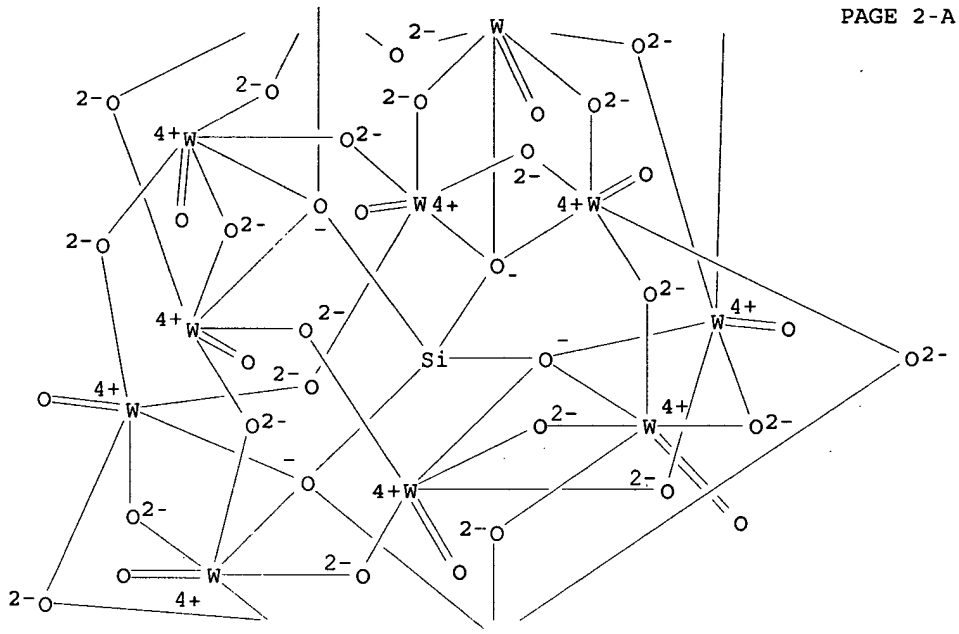
IT **692729-69-4P** 692729-71-8P 692729-72-9P
RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); PROC (Process); USES (Uses)
(of all-lithium salts of heteropolyacid as **electrolyte** of lithium-ion battery)
REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:413431 HCAPLUS
DOCUMENT NUMBER: 139:136001
TITLE: Lithium salts of heteropolyacid as the **electrolyte** of lithium-ion battery
AUTHOR(S): Chen, Ya-Guang; Wang, Cun-Guo; Zhang, Xi-Yan; Xie, De-Ming; Wang, Rong-Shun
CORPORATE SOURCE: Faculty of Chemistry, Northeast Normal University, Changchun, 130024, Peop. Rep. China
SOURCE: Synthetic Metals (2003), 135-136, 225-226
CODEN: SYMEDZ; ISSN: 0379-6779
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The lithium salts of heteropoly acids were prepd. by ion-exchange method and characterized by IR and UV spectra and TG method. They were used as **electrolyte** of lithium-ion batteries. The discharge capacity and the cycle life of the batteries with Li3PW12O40.nH2O and Li4SiW12O40.nH2O **electrolytes** were obviously improved in comparison with that of battery with LiClO4 **electrolyte.** The battery with Li3PW12O40 **electrolyte** has a stronger ability of maintaining its electricity capacity.
IT **86692-11-7P**
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(lithium salts of heteropolyacid as **electrolyte** of lithium-ion secondary battery)
RN 86692-11-7 HCAPLUS
CN Tungstate(4-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododeca-, tetralithium, hydrate (9CI) (CA INDEX NAME)

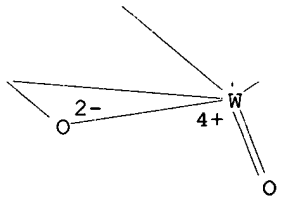
L13

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



PAGE 3-A



●4 Li^+

●x H_2O

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST lithium heteropolyacid salt **electrolyte** ion secondary battery discharge capacity

IT Polyacenes
RL: DEV (Device component use); USES (Uses)
(PAS electrode composite with carbon black and PTFE; lithium salts of heteropolyacid as **electrolyte** of lithium-ion secondary battery)

IT Carbon black, uses
RL: DEV (Device component use); USES (Uses)
(PAS- electrode composite with PTFE and polyacene; lithium salts of heteropolyacid as **electrolyte** of lithium-ion secondary battery)

IT Fluoropolymers, uses
RL: DEV (Device component use); USES (Uses)

(PAS- electrode composite with carbon black and polyacene; lithium salts of heteropolyacid as **electrolyte** of lithium-ion secondary battery)

IT Battery electrodes
Battery **electrolytes**
Electric current-potential relationship
IR spectra
UV and visible spectra
(lithium salts of heteropolyacid as **electrolyte** of lithium-ion secondary battery)

IT Secondary batteries
(lithium; lithium salts of heteropolyacid as **electrolyte** of lithium-ion secondary battery)

IT Electric conductivity
(of PC/DME/heteropolyacid solns.; lithium salts of heteropolyacid as **electrolyte** of lithium-ion secondary battery)

IT Heteropoly acids
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(salts, lithium and potassium salts; lithium salts of heteropolyacid as **electrolyte** of lithium-ion secondary battery)

IT 9002-84-0, PTFE
RL: DEV (Device component use); USES (Uses)
(PAS- electrode composite with carbon black and polyacene; lithium salts of heteropolyacid as **electrolyte** of lithium-ion secondary battery)

IT 12363-31-4D, lithium salts, hydrated 12379-13-4D, lithium salts, hydrated 12534-77-9D, lithium salts, hydrated 29935-35-1 50927-64-5D, lithium salts, hydrated
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(**electrolyte** in PC/DME soln.; lithium salts of heteropolyacid as **electrolyte** of lithium-ion secondary battery)

IT 7791-03-9
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(**electrolyte** soln. in PC/DME; lithium salts of heteropolyacid as **electrolyte** of lithium-ion secondary battery)

IT 108-32-7, Propylene carbonate 115-10-6, Dimethyl ether
RL: DEV (Device component use); USES (Uses)
(**electrolyte** solvent; lithium salts of heteropolyacid as **electrolyte** of lithium-ion secondary battery)

IT 7439-93-2, Lithium, uses
RL: DEV (Device component use); USES (Uses)
(foil electrode; lithium salts of heteropolyacid as **electrolyte** of lithium-ion secondary battery)

IT **86692-11-7P** 99582-24-8P
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(lithium salts of heteropolyacid as **electrolyte** of lithium-ion secondary battery)

IT 12027-46-2P 12207-66-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(lithium salts of heteropolyacid as **electrolyte** of lithium-ion secondary battery)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 6 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:97870 HCAPLUS
DOCUMENT NUMBER: 138:156342
TITLE: Cationic conductive material for energy storage devices

INVENTOR(S): Huang, Yuhong; Wei, Qiang; Zheng, Haixing
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 8 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

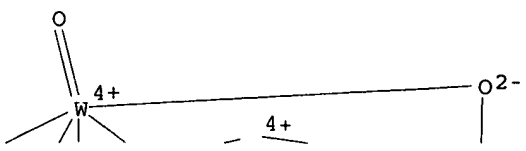
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003027052	A1	20030206	US 2001-917503	20010727
PRIORITY APPLN. INFO.:			US 2001-917503	20010727

AB An **electrolyte** comprising a cationic species disposed in a polyoxometalate network. A compn. comprising cationic species and polyoxometalate anionic species, wherein the polyoxometalate anionic species are coupled through a network of bridge ligands. An app. comprising a 1st electrode and a 2nd electrode; a current collector coupled to one of the 1st and the 2nd electrode; and an **electrolyte** disposed between the 1st electrode and the 2nd electrode, the **electrolyte** comprising a cationic species disposed in a polyoxometalate network.

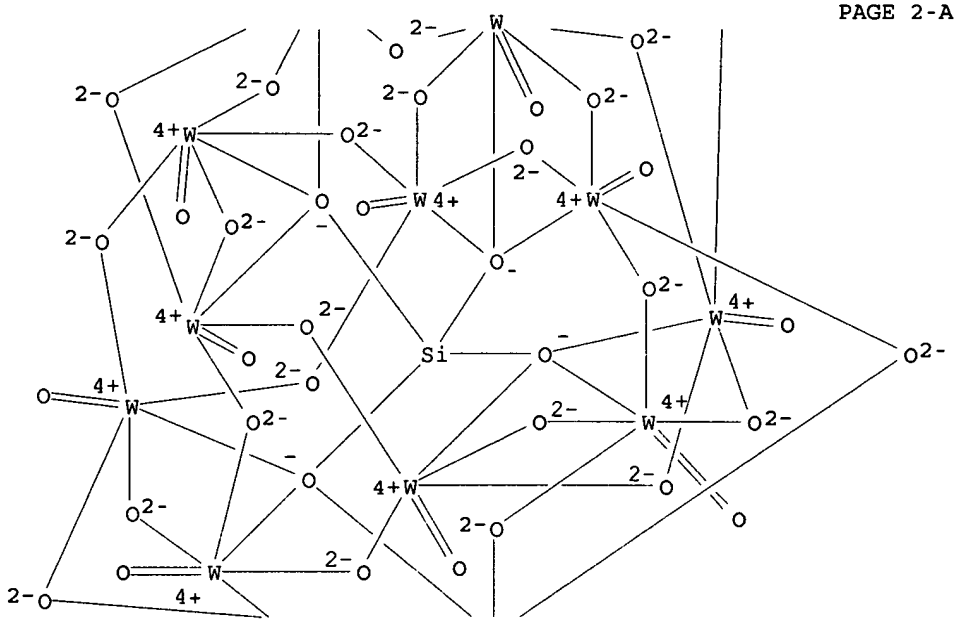
IT **84259-22-3 93279-92-6**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(ionic cond. of)

RN 84259-22-3 HCAPLUS
CN Tungstate(4-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododeca-, tetralithium (9CI) (CA INDEX NAME)

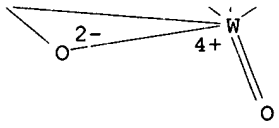
PAGE 1-A



PAGE 2-A



PAGE 3-A

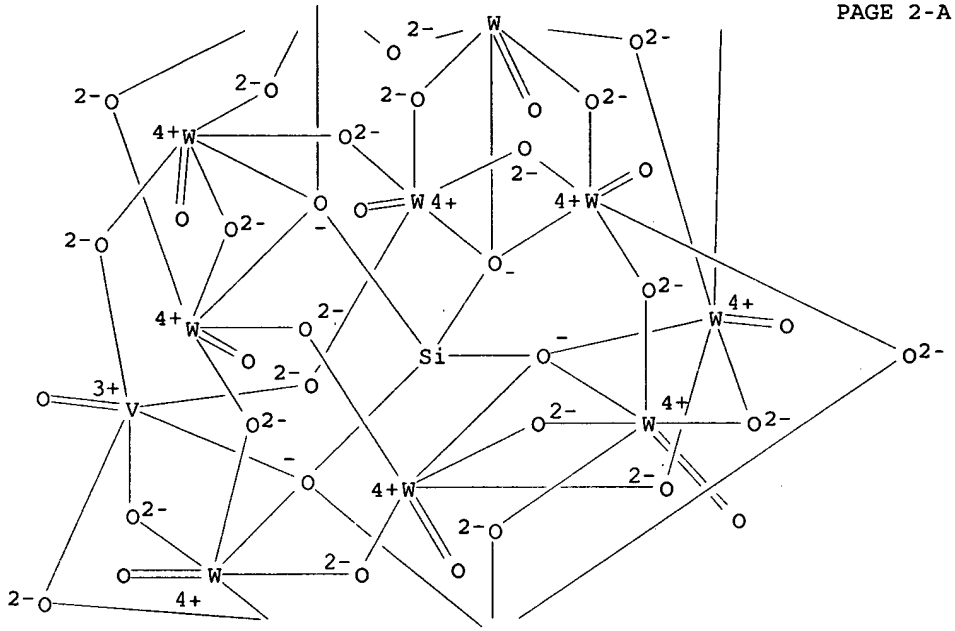


●4 Li+

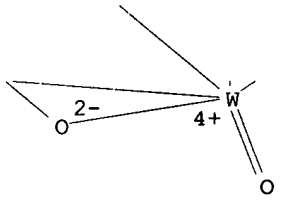
RN 93279-92-6 HCAPLUS
CN Vanadate(5-), (eicosa-μ-oxoundecaoxoundecatungstate)[μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':.k appa.O':κO'':κO'':κO'':κO''':κO''':.ka ppa.O''']]tetra-μ-oxooxo-, pentalithium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



PAGE 3-A



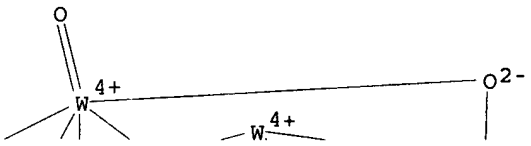
●5 Li+

IC ICM H01M010-36
INCL 429304000; 429322000; 252062200
CC 52-3 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 57, 76, 78
IT 12026-95-8 82691-60-9 83084-35-9 **84259-22-3** **93279-92-6** 379686-96-1 379686-97-2
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(ionic cond. of)
IT 12390-22-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reactions in prepn. of conductor **electrolytes**)
IT 12027-38-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of **electrolyte** from)
IT 495406-46-7P
RL: SPN (Synthetic preparation); TEM (Technical or engineered

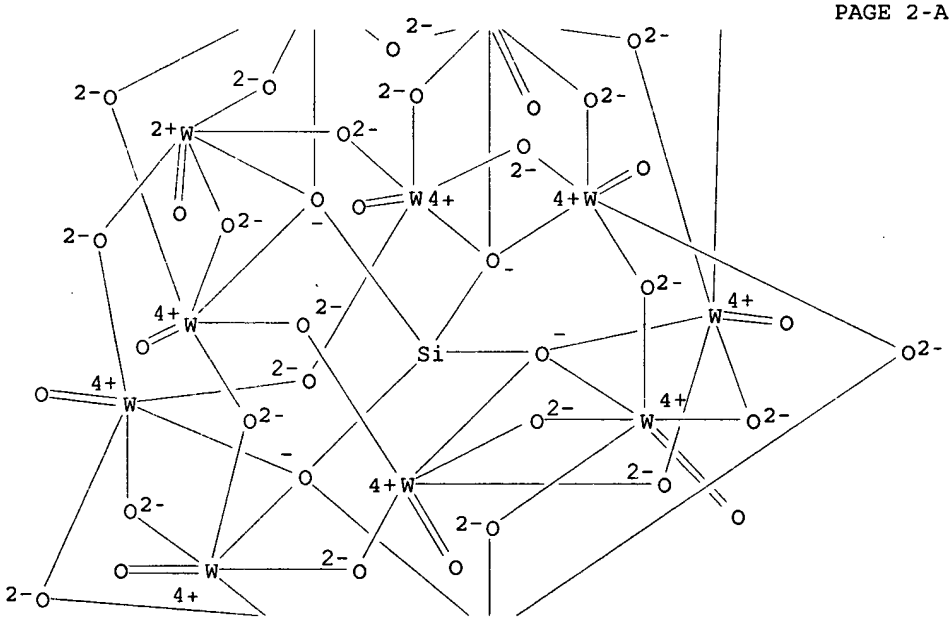
material use); PREP (Preparation); USES (Uses)
(prepn. of **electrolyte** from)
IT 78-10-4, Tetraethoxysilane 1310-65-2, Lithium hydroxide (LiOH)
RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(reactions in prepn. of conductor **electrolytes**)
IT 123-61-5 1643-19-2, Tetrabutylammonium bromide 7631-95-0, Sodium molybdate (Na2MoO4)
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactions in prepn. of conductor **electrolytes**)

L21 ANSWER 7 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:916776 HCAPLUS
DOCUMENT NUMBER: 138:323871
TITLE: A novel application of mixed-valence Keggin-type polyoxometalates as non-aqueous **electrolytes** in polyacenic semiconductor secondary batteries
AUTHOR(S): Wang, Xiuli; Wang, Enbo; Xie, Demin; Zhang, Xiyan; Hu, Changwen; Xu, Lin
CORPORATE SOURCE: Institute of Polyoxometalate Chemistry, Department of Chemistry, Northeast Normal University, Changchun, 130024, Peop. Rep. China
SOURCE: Solid State Ionics (2003), 156(1,2), 71-78
CODEN: SSIOD3; ISSN: 0167-2738
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Mixed-valence Keggin-type lithium polyoxometalates (POMs) were used as the **electrolytes** of polyacenic semiconductor (PAS) secondary batteries substituting for LiClO4 for the first time. The discharging, cycle and self-discharging properties of these PAS/Li secondary batteries and the effect of c.d. and temp. on the properties of the batteries have been investigated. The results indicate not only that the lithium POMs can overcome the disadvantages of LiClO4, which is apt to explode when heated or rammed, but also that some of the PAS/Li secondary batteries assembled with the novel **electrolytes** have larger capacity and smaller self-discharging than that assembled with LiClO4. Therefore, it is believed that Keggin-type mixed-valence lithium POMs are novel and better **electrolytes** of PAS secondary batteries and exhibit promising practical application.
IT **514202-38-1**
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(**electrolytes**; novel application of mixed-valence Keggin-type polyoxometalates as non-aq. **electrolytes** in polyacenic semiconductor secondary batteries)
RN 514202-38-1 HCAPLUS
CN Tungstate(6-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododeca-, hexalithium (9CI) (CA INDEX NAME)

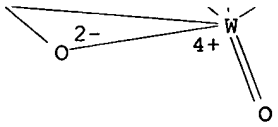
PAGE 1-A



PAGE 2-A



PAGE 3-A



●6 Li^+

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST lithium tungsten oxide phosphate **electrolyte** lithium battery; silicate lithium tungsten oxide **electrolyte** lithium battery; molybdenum lithium oxide phosphate silicate **electrolyte** lithium battery
IT Secondary batteries
(lithium; novel application of mixed-valence Keggin-type polyoxometalates as non-aq. **electrolytes** in polyacenic semiconductor secondary batteries)
IT Battery **electrolytes**
(novel application of mixed-valence Keggin-type polyoxometalates as non-aq. **electrolytes** in polyacenic semiconductor secondary batteries)
IT Heteropoly acids
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(novel application of mixed-valence Keggin-type polyoxometalates as non-aq. **electrolytes** in polyacenic semiconductor secondary batteries)
IT 514202-37-0 **514202-38-1** 514202-49-4
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(**electrolytes**; novel application of mixed-valence Keggin-type polyoxometalates as non-aq. **electrolytes** in polyacenic semiconductor secondary batteries)
IT 514202-39-2, Lithium molybdenum oxide phosphate ($Li_5Mo_{12}O_{36}(PO_4)$)
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(novel application of mixed-valence Keggin-type polyoxometalates as non-aq. **electrolytes** in polyacenic semiconductor secondary batteries)
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 8 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:671907 HCAPLUS
DOCUMENT NUMBER: 136:40116
TITLE: Solid **electrolyte** for thin film energy storage devices
AUTHOR(S): Huang, Yuhong; Jiang, Gengwei; West, William; Hill, Craig
CORPORATE SOURCE: Chemat Technology, Inc., Northridge, CA, 91324, USA
SOURCE: Proceedings of the Intersociety Energy Conversion Engineering Conference (2001), 36th(Vol. 2), 887-889
CODEN: PIECDE; ISSN: 0146-955X
PUBLISHER: Society of Automotive Engineers
DOCUMENT TYPE: Journal
LANGUAGE: English
AB There is a need for the development of solid-state micro power sources with both high power and high energy d. as a new type of power supply for advanced consumer electronics, MEMS, sensors, computer equipment and communication systems. To satisfy the

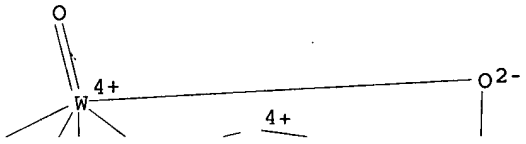
requirements of a compact and lightwt. power supply, thin film batteries are under consideration as candidates for the hybrid power sources. A novel solid **electrolyte** based on polyoxometalates has been studied for thin film energy storage devices. This class of nano-cluster materials show considerable potential in both proton and lithium ion solid **electrolyte** conductive coatings. A spin-on thin film deposition process was developed in this research.

IT **84259-22-3**, Lithium tungstosilicate li4siw12o40
93279-92-6
RL: DEV (Device component use); USES (Uses)
(solid **electrolyte** for thin film energy storage devices)

RN 84259-22-3 HCAPLUS

CN Tungstate(4-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododeca-, tetralithium (9CI) (CA INDEX NAME)

PAGE 1-A



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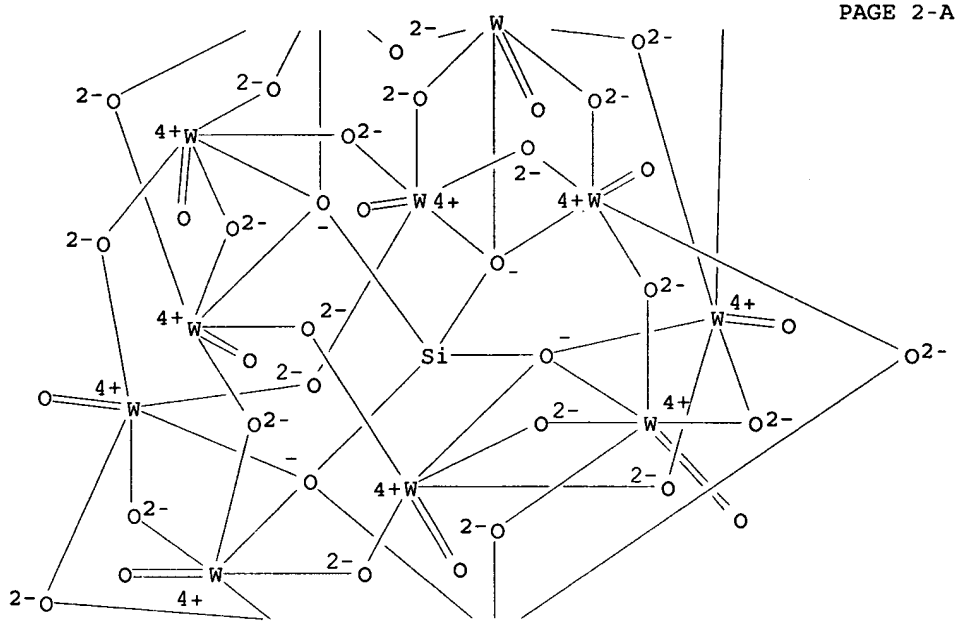

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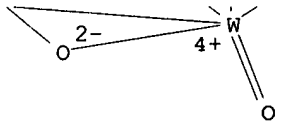
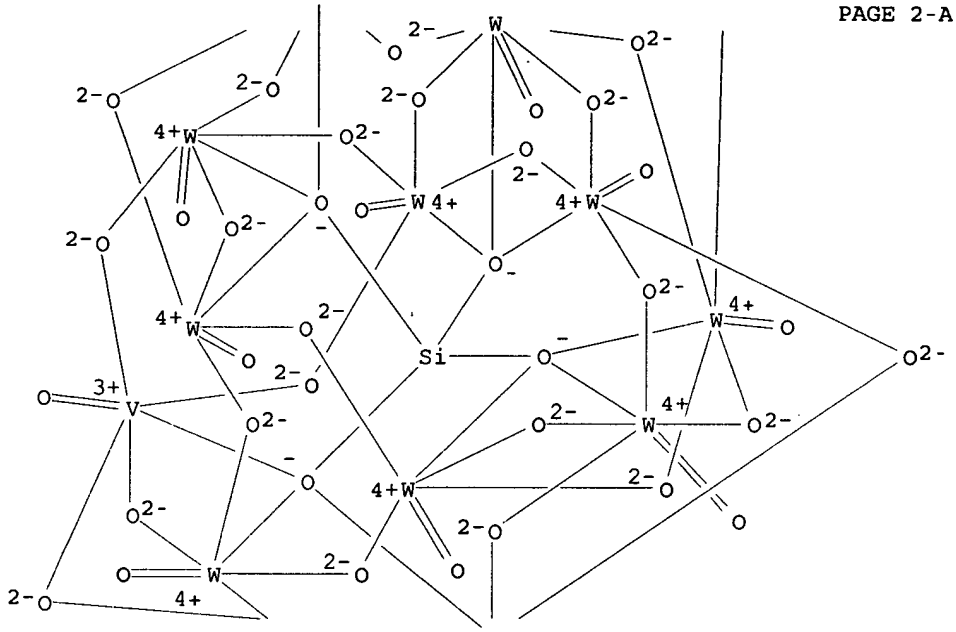


●4 Li+

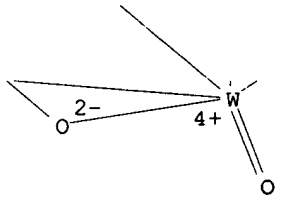
RN 93279-92-6 HCAPLUS
CN Vanadate(5-), (eicosa-μ-oxoundecaoxoundecatungstate)[μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':.k appa.O':κO'':κO'':κO'':κO''':κO''':.ka ppa.O''']]tetra-μ-oxooxo-, pentalithium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



PAGE 3-A



●5 Li^+

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): **72**

ST solid **electrolyte** polyoxometalate film lithium battery

IT Heteropoly acids
RL: DEV (Device component use); USES (Uses)
(lithium salts; solid **electrolyte** for thin film energy storage devices)

IT Ionic conductivity
(solid **electrolyte** for thin film energy storage devices)

IT Battery **electrolytes**
(solid; solid **electrolyte** for thin film energy storage devices)

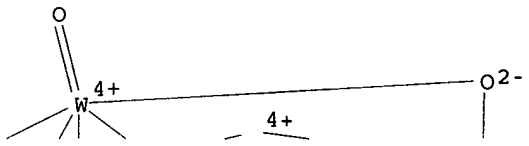
IT Coating process
(spin; solid **electrolyte** for thin film energy storage devices)

IT 12026-95-8, Lithium tungstophosphate li3pw12o40 82691-60-9
83084-35-9 **84259-22-3**, Lithium tungstosilicate li4siw12o40
93279-92-6 138597-47-4 379686-96-1 379686-97-2
RL: DEV (Device component use); USES (Uses)

(solid **electrolyte** for thin film energy storage devices)
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:196425 HCAPLUS
DOCUMENT NUMBER: 132:285378
TITLE: Role of Cation Size in the Energy of Electron Transfer to 1:1 Polyoxometalate Ion Pairs {(M+)(Xn+VW11O40)}(8-n)- (M = Li, Na, K)
AUTHOR(S): Grigoriev, Vladimir A.; Hill, Craig L.; Weinstock, Ira A.
CORPORATE SOURCE: Department of Chemistry, Emory University, Atlanta, GA, 30322, USA
SOURCE: Journal of the American Chemical Society (2000), 122(14), 3544-3545
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB By carefully controlling polyoxometalates (POM) size, structure and charge, temp., buffer and **electrolyte** compn., and concn. as series of 1:1 assocn. complexes were prepd. between alkali metal cations (Li+, Na+, and K+) and three representative vanadium(V)-substituted α-Keggin heteropolytungstates α-(Xn+VW11O40)(9-n)- (X = P(V), Si(IV), and Al(III)). Formal 1e- redn. potentials are assigned. to specific 1:1 ion pairs.
IT **263756-29-2**
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); FORM (Formation, nonpreparative); PROC (Process); RACT (Reactant or reagent)
(formation and effective hydrodynamic radii and redn. potential in aq. tert-Bu alc.: role of cation size in energy of electron transfer to 1:1 polyoxometalate ion pairs)
RN 263756-29-2 HCAPLUS
CN Vanadate(5-), (eicosa-μ-oxoundecaoxoundecatungstate)[μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':.k appa.O':κO'':κO'':κO'':κO''':κO''':.ka ppa.O''']]tetra-μ-oxooxo-, monolithium (9CI) (CA INDEX NAME)

PAGE 1-A



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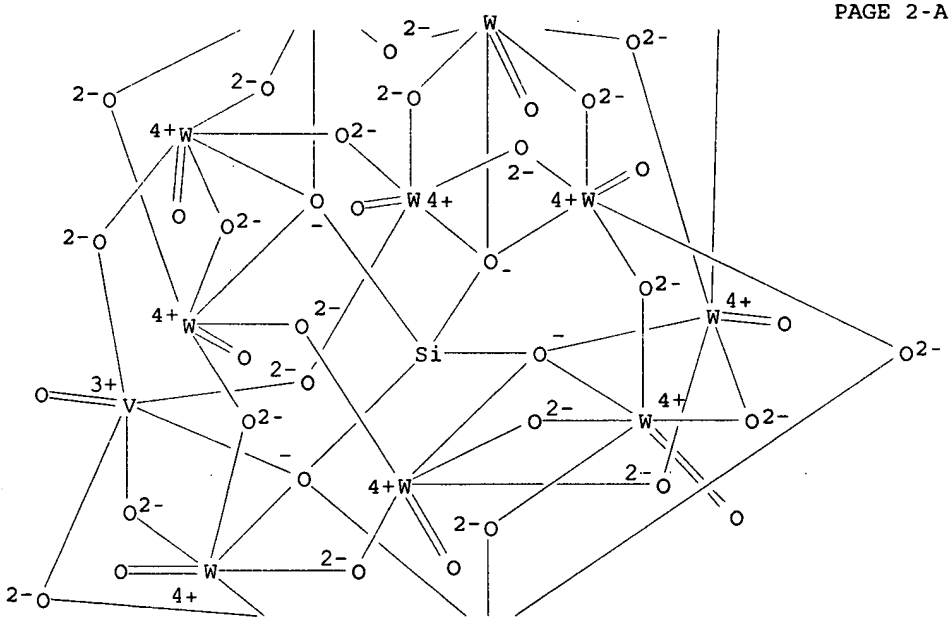

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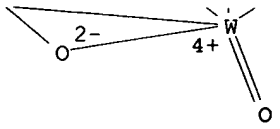

● Li+

CC 72-2 (**Electrochemistry**)
Section cross-reference(s): 67, 68, 78
IT 263756-24-7 263756-26-9 263756-28-1 **263756-29-2**
263756-31-6 263756-33-8 263756-35-0 263756-37-2 263756-39-4
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); FORM (Formation, nonpreparative); PROC (Process); RACT (Reactant or reagent)
(formation and effective hydrodynamic radii and redn. potential in aq. tert-Bu alc.: role of cation size in energy of electron transfer to 1:1 polyoxometalate ion pairs)
REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 10 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:659663 HCAPLUS
DOCUMENT NUMBER: 121:259663
TITLE: Secondary nonaqueous-**electrolyte** battery and its manufacture
INVENTOR(S): Iwasaki, Fumiharu; Yahagi, Seiji; Sakata, Akifumi; Chinone, Kazuo; Ishikawa, Hideki; Sakai, Tsugio; Tahara, Kensuke
PATENT ASSIGNEE(S): Seiko Instruments Inc., Japan; Seiko Electronic Components Ltd.
SOURCE: Eur. Pat. Appl., 22 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 615296	A1	19940914	EP 1994-301699	199403 10
EP 615296 R: DE, FR, GB	B1	19980128		
JP 07230800	A2	19950829	JP 1994-6023	199401 24
JP 3010226	B2	20000221		
JP 2000077075	A2	20000314	JP 1999-270950	199401 24
JP 2000082459	A2	20000321	JP 1999-270949	199401 24
US 5506075	A	19960409	US 1994-205948	199403 03

PRIORITY APPLN. INFO.:

JP 1993-49716	A	19930310
JP 1993-80944	A	19930407
JP 1993-83682	A	19930409
JP 1993-328379	A	19931224
JP 1994-6023	A	19940124

AB The battery comprises ≥1 anode, a cathode, and a nonaq. **electrolyte** with Li ion cond., wherein a composite oxide LixSi1-yMyOz is used as an active material of the anode, where M represents ≥1 oxide-forming element other than alkali metals and Si (e.g., Ti, W, Mn, Fe, Ni, B, Sn, or Pb) 0 <x, 0 <y <1, and 0 <z <2. The battery has an enhanced high current charge and discharge characteristic with a high voltage and high energy d. but with less deterioration due to overcharge and overdischarge, and also has a long service life.

IT **158710-01-1**, Lithium silicon tungsten oxide (Li0-1Si0.9W0.1O1.1)
RL: DEV (Device component use); USES (Uses)
(anodes for lithium nonaq.-**electrolyte** batteries)

RN 158710-01-1 HCAPLUS

CN Lithium silicon tungsten oxide (Li0-1Si0.9W0.1O1.1) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1.1	17778-80-2
W	0.1	7440-33-7
Si	0.9	7440-21-3
Li	0 - 1	7439-93-2

IC ICM H01M004-48
ICS H01M010-40

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST lithium nonaq **electrolyte** battery anode; titanium silicon oxide battery anode; tungsten silicon oxide battery anode; manganese silicon oxide battery anode; iron silicon oxide battery anode; nickel silicon oxide battery anode; boron silicon oxide battery anode; tin silicon oxide battery anode; lead silicon oxide battery anode

IT Batteries, secondary
(nonaq.-**electrolyte** lithium)

IT 39302-36-8, Lithium silicon titanium oxide **158710-01-1**, Lithium silicon tungsten oxide (Li0-1Si0.9W0.1O1.1) 158710-02-2, Lithium silicon tin oxide (Li0-1Si0-1Sn0-1O2) 158710-03-3, Lead lithium silicon oxide (Pb0-1Li0-1Si0-1O2) 158710-04-4, Lithium silicon borate oxide (Li0-1Si0.25-1(BO2)0-0.75O1.62-2) 158710-05-5, Lithium manganese silicon oxide (Li0-1Mn0-0.75Si0.25-1O2)
RL: DEV (Device component use); USES (Uses)
(anodes for lithium nonaq.-**electrolyte** batteries)

IT 158697-57-5, Silicon tungsten oxide (Si0.9W0.1O1.1) 158697-58-6, Silicon tin oxide (Si0.9Sn0.1O) 158697-59-7, Lead silicon oxide (Pb0.1Si0.9O) 158697-60-0, Silicon borate oxide (Si0.9(BO3)0.1O0.75) 158697-61-1, Manganese silicon oxide (Mn0.5Si0.5O) 158697-62-2, Silicon titanium oxide (Si0.75Ti0.25O) 158697-63-3, Silicon titanium oxide (Si0.5Ti0.5O) 158697-64-4, Silicon titanium oxide (Si0.25Ti0.75O)
RL: DEV (Device component use); USES (Uses)
(anodes for lithium nonaq.-**electrolyte** batteries from lithiated)

=> file reg
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=> d l13 que stat
L3 7 SEA FILE=REGISTRY ABB=ON PLU=ON LI2O/MF
L4 48 SEA FILE=REGISTRY ABB=ON PLU=ON O2SI/MF
L5 29 SEA FILE=REGISTRY ABB=ON PLU=ON N2/MF
L6 4 SEA FILE=REGISTRY ABB=ON PLU=ON NB2O5/MF
L7 4 SEA FILE=REGISTRY ABB=ON PLU=ON O5TA/MF
L8 15 SEA FILE=REGISTRY ABB=ON PLU=ON O3W/MF
L9 19 SEA FILE=HCAPLUS ABB=ON PLU=ON (L3 OR LITHIUM OXIDE OR LI2O OR DILITHIUM OXIDE) AND (L4 OR SILICA OR SILICON OXIDE OR SIO2) AND (L5 AND NITROGEN OR N2) AND (L6 OR NIOBIUM OXIDE OR NIOBIUM PENTOXIDE OR L7 OR TANTALUM OXIDE OR TA2O5 OR L8 OR TUNGSTEN OXIDE OR WO3)
L10 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 (L) ELECTROLYT?
L11 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 AND ELECTROLYT?
L12 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 AND ELECTROCHEM?/SC,SX
L13 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L10 OR L11 OR L12

=> file hcaplus
FILE 'HCAPLUS' ENTERED AT 13:31:14 ON 31 AUG 2006
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=> d l13 1-7 ibib abs hitstr hitind

L13 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:1221318 HCAPLUS
DOCUMENT NUMBER: 143:479882
TITLE: Novel proton conducting materials and devices incorporating them
INVENTOR(S): Berland, Brian S.; Gade, Sabina; Schaller, Ronald W.; Schwartz, Michael
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 9 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

US 2005252853 A1 20051117 US 2004-844830
200405
13
PRIORITY APPLN. INFO.: US 2004-844830
200405
13

AB Materials for use in proton transport characterized by several formulas are disclosed. Mixed ion and electron conductors may include metals and/or ceramic electron conductors and a proton conducting material. Hydrogen sepn. membranes may include porous layers and an **electrolyte** layer including a proton conducting material and an electron conductor. Hydrogen sepn. membranes may be formed by thermal spray techniques. Hydrogen sepn. membranes may include a catalyst layer. A method of sepg. hydrogen from a mixed gas stream includes passing the mixed gas through a 1st porous layer to an **electrolyte** layer, dissocg. protons and electrons, diffusing the protons and electrons through the **electrolyte** layer, recombining them, and passing mol. hydrogen through a 2nd porous layer.

IT **7727-37-9**, **Nitrogen**, processes
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(novel proton conducting materials and devices incorporating them, such such as hydrogen sepn. membranes)
RN 7727-37-9 HCAPLUS
CN Nitrogen (8CI, 9CI) (CA INDEX NAME)

IC ICM B01D071-00
INCL 210500250; 502302000
CC 48-1 (Unit Operations and Processes)
Section cross-reference(s): 57, **72**, 76
IT Calcination
Ceramic membranes
Electric conductors
Electrolytes
Gelation
Porous materials
(novel proton conducting materials and devices incorporating them, such such as hydrogen sepn. membranes)
IT 124-38-9, Carbon dioxide, processes **7727-37-9**, **Nitrogen**, processes
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(novel proton conducting materials and devices incorporating them, such such as hydrogen sepn. membranes)
IT 7429-90-5D, Aluminum, oxides contg. 7429-91-6D, Dysprosium, oxides contg. 7439-88-5D, Iridium, oxides contg. 7439-89-6D, Iron, oxides contg. 7439-91-0D, Lanthanum, oxides contg. 7439-92-1D, Lead, oxides contg. 7439-93-2D, **Lithium**, **oxides** contg. 7439-94-3D, Lutetium, oxides contg. 7439-95-4D, Magnesium, oxides contg. 7439-96-5D, Manganese, oxides contg. 7439-97-6D, Mercury, oxides contg. 7439-98-7D, Molybdenum, oxides contg. 7440-00-8D, Neodymium, oxides contg. 7440-02-0D, Nickel, oxides contg. 7440-03-1D, **Niobium**, **oxides** contg. 7440-04-2D, Osmium, oxides contg. 7440-05-3D, Palladium, oxides contg. 7440-06-4D, Platinum, oxides contg. 7440-09-7D,

Potassium, oxides contg. 7440-10-0D, Praseodymium, oxides contg. 7440-12-2D, Promethium, oxides contg. 7440-14-4D, Radium, oxides contg. 7440-15-5D, Rhenium, oxides contg. 7440-16-6D, Rhodium, oxides contg. 7440-17-7D, Rubidium, oxides contg. 7440-18-8D, Ruthenium, oxides contg. 7440-19-9D, Samarium, oxides contg. 7440-20-2D, Scandium, oxides contg. 7440-21-3D, **Silicon, oxides** contg. 7440-22-4D, Silver, oxides contg. 7440-23-5D, Sodium, oxides contg. 7440-24-6D, Strontium, oxides contg. 7440-25-7D, **Tantalum, oxides** contg. 7440-26-8D, Technetium, oxides contg. 7440-29-1D, Thorium, oxides contg. 7440-30-4D, Thulium, oxides contg. 7440-31-5D, Tin, oxides contg. 7440-32-6D, Titanium, oxides contg. 7440-33-7D, **Tungsten, oxides** contg. 7440-39-3D, Barium, oxides contg. 7440-41-7D, Beryllium, oxides contg. 7440-42-8D, Boron, oxides contg. 7440-43-9D, Cadmium, oxides contg. 7440-44-0D, Carbon, oxides contg. 7440-45-1D, Cerium, oxides contg. 7440-46-2D, Cesium, oxides contg. 7440-47-3D, Chromium, oxides contg. 7440-48-4D, Cobalt, oxides contg. 7440-50-8D, Copper, oxides contg. 7440-52-0D, Erbium, oxides contg. 7440-53-1D, Europium, oxides contg. 7440-54-2D, Gadolinium, oxides contg. 7440-55-3D, Gallium, oxides contg. 7440-56-4D, Germanium, oxides contg. 7440-57-5D, Gold, oxides contg. 7440-58-6D, Hafnium, oxides contg. 7440-60-0D, Holmium, oxides contg. 7440-62-2D, Vanadium, oxides contg. 7440-64-4D, Ytterbium, oxides contg. 7440-65-5D, Yttrium, oxides contg. 7440-66-6D, Zinc, oxides contg. 7440-67-7D, Zirconium, oxides contg. 7440-70-2D, Calcium, oxides contg. 7440-73-5D, Francium, oxides contg. 7440-74-6D, Indium, oxides contg.
RL: TEM (Technical or engineered material use); USES (Uses)
(novel proton conducting materials and devices incorporating them, such such as hydrogen sepn. membranes)

L13 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:650241 HCAPLUS
DOCUMENT NUMBER: 141:194503
TITLE: Artificial dielectric systems and devices with sintered ceramic matrix material
INVENTOR(S): Dalton, Robert C.
PATENT ASSIGNEE(S): USA
SOURCE: PCT Int. Appl., 121 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

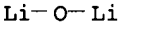
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004068549	A2	20040812	WO 2004-US2061	200401 26
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI				
EP 1639625	A2	20060329	EP 2004-705273	200401 26
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
PRIORITY APPLN. INFO.:			US 2003-351685 A	200301 27

WO 2004-US2061 W
200401
26

AB An electromagnetic susceptor for chem. processing having a matrix material that surrounds a non-matrix material that is made from a material that is different from the matrix material, the matrix material is constructed of a sintered ceramic material having lower dielec. losses compared to the non-matrix material, the non-matrix material initially absorbs electromagnetic energy applied to the electromagnetic susceptor to a greater extent than the matrix material, and the non-matrix material produces subsequent heat in the matrix material. This present invention, in its broadest sense, is an improved design that will produce a more homogeneous distribution of energy by: (1) the design of the cavity geometry; (2) the location of the applied energy sources; and (3) the depth of penetration of the susceptor. The device employs: (1) alternate cavity and susceptor geometries for providing more homogeneous interactions of applied electromagnetic energy in the vol. of the susceptor regardless of the flow rate and diam. of the exhaust duct width; (2) heat transfer methods to improve the overall heat efficiency of the device; (3) a susceptor structure that has reflectivity as principle mode of interaction with applied electromagnetic energy, which allows for energy to penetrate a susceptor; (4) composite susceptor materials; (5) a simple method of controlling the temp. vs. energy concn. in the susceptor; and (6) field concentrators to conc. the energy d. of the applied electromagnetic energy. In this invention, the penetration depth of the susceptor can be used to provide for the destruction of pollutants or reaction of gases by either (1) a method that primarily produces heat for thermal treatment; (2) a method that primarily uses the applied electromagnetic energy for interaction with gaseous/particulate species for chem. reaction or destruction of pollutants; (3) a method that produces fluorescent radiation; (4) a method that produces thermoluminescent radiation; (5) a method that produces scattering of the applied electromagnetic energy for concg. the applied energy; or (6) a combination of these five methods.

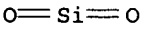
IT **12057-24-8**, **Lithium oxide**, uses
RL: DEV (Device component use); USES (Uses)
(alone or coupled with CuO, CuO2 or MnO2; artificial dielec. systems and electromagnetic susceptor devices with sintered ceramic matrix material for gas treatment or promotion of reactions)

RN 12057-24-8 HCAPLUS
CN Lithium oxide (Li2O) (8CI, 9CI) (CA INDEX NAME)



IT **15468-32-3**, Tridymite (SiO2) **99439-28-8**,
β-Quartz,
RL: DEV (Device component use); USES (Uses)
(as cryst.-phase matrix material; artificial dielec. systems and electromagnetic susceptor devices with sintered ceramic matrix material for gas treatment or promotion of reactions)

RN 15468-32-3 HCAPLUS
CN Tridymite (SiO2) (9CI) (CA INDEX NAME)



RN 99439-28-8 HCAPLUS

CN Quartz-beta (SiO2) (9CI) (CA INDEX NAME)

O=Si=O

IT **14808-60-7**, Quartz, uses
RL: DEV (Device component use); USES (Uses)
(as matrix or non-matrix material; artificial dielec. systems and electromagnetic susceptor devices with sintered ceramic matrix material for gas treatment or promotion of reactions)
RN 14808-60-7 HCAPLUS
CN Quartz (SiO2) (9CI) (CA INDEX NAME)

O=Si=O

IT **99493-54-6**, Tridymite-beta (SiO2)
RL: DEV (Device component use); USES (Uses)
(beta' and beta'' forms, as cryst.-phase matrix material; artificial dielec. systems and electromagnetic susceptor devices with sintered ceramic matrix material for gas treatment or promotion of reactions)
RN 99493-54-6 HCAPLUS
CN Tridymite-beta (SiO2) (9CI) (CA INDEX NAME)

O=Si=O

IT **7631-86-9**, **Silica**, uses
RL: DEV (Device component use); USES (Uses)
(including amorphous, as matrix material, or cryst. form as non-matrix material; artificial dielec. systems and electromagnetic susceptor devices with sintered ceramic matrix material for gas treatment or promotion of reactions)
RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

IT **14464-46-1**, Crystobalite
RL: DEV (Device component use); USES (Uses)
(α- or β-, as cryst.-phase matrix material; artificial dielec. systems and electromagnetic susceptor devices with sintered ceramic matrix material for gas treatment or promotion of reactions)
RN 14464-46-1 HCAPLUS
CN Cristobalite (SiO2) (9CI) (CA INDEX NAME)

O=Si=O

IC ICM H01L
CC 59-4 (Air Pollution and Industrial Hygiene)
Section cross-reference(s): **52**, 63, 73, 75
IT **12057-24-8**, **Lithium oxide**, uses
RL: DEV (Device component use); USES (Uses)
(alone or coupled with CuO, CuO2 or MnO2; artificial dielec. systems and electromagnetic susceptor devices with sintered ceramic matrix material for gas treatment or promotion of reactions)

IT 1302-54-1, Anorthite 1302-88-1, Cordierite 1302-93-8, Mullite 12141-45-6, Sillimanite 12244-10-9, Albite, 12251-43-3, Microcline 12251-44-4, Orthoclase 13983-17-0, Wollastonite 14654-06-9, Clino-enstatite **15468-32-3**, Tridymite (SiO2) 15593-90-5, Metasilicate 17181-37-2, Orthosilicate 20617-83-8, Pyrosilicate **99439-28-8**, β-Quartz,
RL: DEV (Device component use); USES (Uses)
(as cryst.-phase matrix material; artificial dielec. systems and electromagnetic susceptor devices with sintered ceramic matrix material for gas treatment or promotion of reactions)

IT 9002-84-0, Polytetrafluoroethylene 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9003-53-6, Polystyrene **14808-60-7**, Quartz, uses
RL: DEV (Device component use); USES (Uses)
(as matrix or non-matrix material; artificial dielec. systems and electromagnetic susceptor devices with sintered ceramic matrix material for gas treatment or promotion of reactions)

IT 409-21-2, Silicon carbide, uses 1307-96-6, Cobalt oxide coo, uses 1314-13-2, Zinc oxide, uses 1317-37-9, Ferrous sulfide 1317-40-4, Cupric sulfide 1317-61-9, Iron oxide fe3o4, uses 1317-70-0, Anatase 1344-54-3, Titanium oxide ti2o3 1345-25-1, Ferrous oxide, uses 3812-32-6, Carbonate, uses 7429-90-5D, Aluminum, metal compds. with 7440-02-0, Nickel, uses 7440-44-0, Carbons, uses 7440-48-4, Cobalt, uses 7440-66-6D, Zinc, compd. with oxygen, non-stoichiometric 7440-67-7D, Zirconium, compd. with oxygen, non-stoichiometric 7782-42-5, Graphite, uses 11130-73-7, Tungsten carbide 11148-32-6 12017-01-5, Cobalt titanate cotio3 12022-71-8, Iron titanate fetio3 12031-63-9, Lithium **niobium oxide** linbo3 12032-30-3, Magnesium titanate 12032-74-5, Manganese titanate mntio3 12035-39-1, Nickel titanate 12070-08-5, Titanium carbide 12137-20-1, Titanium oxide tio 12163-56-3, Manganese oxide mn2o5 12653-76-8, Nickel titanium oxide 12789-64-9, Iron titanium oxide 37247-93-1, Cobalt titanium oxide 39318-31-5, Magnesium titanium oxide 54990-20-4, Manganese titanium oxide 136512-99-7, Titanium carbide (TiC0-1) 737008-13-8, Carbon titanium oxide
RL: DEV (Device component use); USES (Uses)
(as non-matrix material; artificial dielec. systems and electromagnetic susceptor devices with sintered ceramic matrix material for gas treatment or promotion of reactions)

IT **99493-54-6**, Tridymite-beta (SiO2)
RL: DEV (Device component use); USES (Uses)
(beta' and beta'' forms, as cryst.-phase matrix material; artificial dielec. systems and electromagnetic susceptor devices with sintered ceramic matrix material for gas treatment or promotion of reactions)

IT **7631-86-9**, **Silica**, uses
RL: DEV (Device component use); USES (Uses)
(including amorphous, as matrix material, or cryst. form as non-matrix material; artificial dielec. systems and electromagnetic susceptor devices with sintered ceramic matrix material for gas treatment or promotion of reactions)

IT 10102-44-0, Nitrogen dioxide, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); REM (Removal or disposal); PROC (Process)
(redn. to **N2** or NO; artificial dielec. systems and electromagnetic susceptor devices with sintered ceramic matrix material for gas treatment or promotion of reactions)

IT 11104-93-1, Nitrogen oxide, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); REM (Removal or disposal); PROC (Process)
(redn. to **N2**, including in presence of hydrocarbons, ammonia or ammonium-contg. compds.; artificial dielec. systems and electromagnetic susceptor devices with sintered ceramic matrix material for gas treatment or promotion of reactions)

IT **14464-46-1**, Crystobalite

RL: DEV (Device component use); USES (Uses)
(α- or β-, as cryst.-phase matrix material; artificial dielec. systems and electromagnetic susceptor devices with sintered ceramic matrix material for gas treatment or promotion of reactions)

L13 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:430509 HCAPLUS
DOCUMENT NUMBER: 140:426100
TITLE: Solid **electrolyte** for battery
INVENTOR(S): Park, Young-sin; Lee, Seok-soo; Jin, Young-gu
PATENT ASSIGNEE(S): Samsung Electronics Co., Ltd., S. Korea
SOURCE: U.S. Pat. Appl. Publ., 7 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004101761	A1	20040527	US 2003-656180	20030908
KR 2004046433	A	20040605	KR 2002-74362	20021127
EP 1427042	A1	20040609	EP 2003-255187	20030821
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2004179161	A2	20040624	JP 2003-387552	20031118

PRIORITY APPLN. INFO.: KR 2002-74362 A 20021127

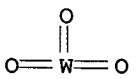
AB A solid **electrolyte**, a method of manufg. the same, and a lithium battery and a thin-film battery that employ the solid **electrolyte** are provided. The solid **electrolyte** contains **nitrogen** to enhance the ionic cond. and electrochem. stability of batteries.

IT **1313-96-8**, **Niobium oxide** (Nb2O5)
1314-35-8, **Tungsten oxide** (WO3
), processes **7631-86-9**, **Silica**, processes
12057-24-8, **Lithium oxide** (Li2O
), processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(solid **electrolyte** for battery)

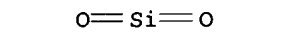
RN 1313-96-8 HCAPLUS
CN Niobium oxide (Nb2O5) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

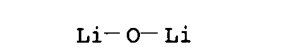
RN 1314-35-8 HCAPLUS
CN Tungsten oxide (WO3) (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 12057-24-8 HCAPLUS
CN Lithium oxide (Li2O) (8CI, 9CI) (CA INDEX NAME)



IT **7727-37-9, Nitrogen**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(solid **electrolyte** for battery)
RN 7727-37-9 HCAPLUS
CN Nitrogen (8CI, 9CI) (CA INDEX NAME)

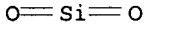
IC ICM H01M006-18
ICS C04B035-00
INCL 429322000; 501096100; 501096500
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST battery solid **electrolyte**
IT Vapor deposition process
(chem.; solid **electrolyte** for battery)
IT Electron beams
(deposition by; solid **electrolyte** for battery)
IT Ion beams
(deposition ny; solid **electrolyte** for battery)
IT Secondary batteries
(lithium; solid **electrolyte** for battery)
IT Battery **electrolytes**
Sputtering
(solid **electrolyte** for battery)
IT **1313-96-8, Niobium oxide** (Nb2O5)
1314-35-8, Tungsten oxide (**WO3**
), processes 1314-61-0, **Tantalum oxide** (
Ta2O5) **7631-86-9, Silica**, processes
10377-52-3 **12057-24-8, Lithium oxide** (
Li2O), processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(solid **electrolyte** for battery)
IT 691009-59-3P, Lithium **niobium oxide** silicate
(Li0.32Nb0.32O0.29(SiO3)0.67) 691009-60-6P, Lithium
niobium oxide silicate
(Li1.16Nb0.58O1.77(SiO4)0.13) 691009-62-8P, Lithium
niobium oxide silicate
(Li1.16Nb0.26O0.65(SiO4)0.29) 691009-64-0P, Lithium
niobium oxide silicate
(Li1.34Nb0.32O1.15(SiO4)0.16) 691009-66-2P, Lithium
niobium oxide silicate (Li1.3Nb0.1O0.3(SiO4)0.3)
691009-68-4P, Lithium **niobium oxide** silicate
(Li1.4Nb0.2O0.8(SiO4)0.2) 691009-70-8P, Lithium **niobium**
oxide silicate (Li1.4Nb0.1O0.45(SiO4)0.25) 691009-72-0P,
Lithium oxide phosphate silicate

(Li1.55O0.2(PO4)0.05(SiO4)0.25)
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(solid **electrolyte** for battery)
IT 7440-37-1, Argon, uses **7727-37-9**, **Nitrogen**, uses
7782-44-7, Oxygen, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(solid **electrolyte** for battery)

L13 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:412652 HCAPLUS
DOCUMENT NUMBER: 140:378137
TITLE: Preparation of solid **electrolyte** for lithium rechargeable batteries
INVENTOR(S): Shibano, Yasuyuki; Iwamoto, Kazuya
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: U.S. Pat. Appl. Publ., 8 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004096745	A1	20040520	US 2003-702491	200311 07
JP 2004179158	A2	20040624	JP 2003-381940	200311 12
PRIORITY APPLN. INFO.:			JP 2002-328476 A	200211 12

AB A lithium ion conductor is prepd. having the general formula LiaNbbTacOdNe where 0.1≤a≤2.5, 0≤b<1, 0<c≤1, b+c=1, 0.1≤d≤5, and 0.1≤e≤2. The prepd. lithium ion conductor is used as solid **electrolyte** in lithium ion rechargeable batteries.
IT **7631-86-9**, **Silica**, uses
RL: DEV (Device component use); USES (Uses)
(prepn. of solid **electrolyte** for lithium rechargeable batteries)
RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT **7727-37-9P**, **Nitrogen**, uses
RL: NUU (Other use, unclassified); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(prepn. of solid **electrolyte** for lithium rechargeable batteries)
RN 7727-37-9 HCAPLUS
CN Nitrogen (8CI, 9CI) (CA INDEX NAME)

IC ICM C01B021-20
INCL 429322000; 423385000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST lithium secondary battery solid **electrolyte** oxide nitride
IT Secondary batteries
(lithium; prepn. of solid **electrolyte** for lithium rechargeable batteries)
IT 7440-21-3, Silicon, uses
RL: DEV (Device component use); USES (Uses)
(base plate, electrode; prepn. of solid **electrolyte** for lithium rechargeable batteries)
IT 1314-62-1, Vanadium pentoxide, uses 7439-93-2, Lithium, uses 7782-42-5, Graphite, uses 12022-46-7, Iron **lithium oxide** feli02 12031-65-1, Lithium nickel oxide lini02 12031-95-7, Lithium titanium oxide li4ti5o12 12057-17-9, Lithium manganese oxide limn2o4 12190-79-3, Cobalt **lithium oxide** colio2 13824-63-0, Cobalt lithium phosphate 15365-14-7, Iron lithium phosphate felipo4 372075-87-1, Iron lithium fluoride phosphate felifpo4 433708-99-7, Cobalt lithium fluoride phosphate colifpo4 685528-73-8, Cobalt lithium nitride oxide (Co2.6LiNO0.4)
RL: DEV (Device component use); USES (Uses)
(electrode; prepn. of solid **electrolyte** for lithium rechargeable batteries)
IT 7440-50-8, Copper, uses
RL: DEV (Device component use); USES (Uses)
(neg. electrode current collector; prepn. of solid **electrolyte** for lithium rechargeable batteries)
IT 7440-06-4, Platinum, uses
RL: DEV (Device component use); USES (Uses)
(pos. electrode current collector; prepn. of solid **electrolyte** for lithium rechargeable batteries)
IT **7631-86-9**, **Silica**, uses
RL: DEV (Device component use); USES (Uses)
(prepn. of solid **electrolyte** for lithium rechargeable batteries)
IT **7727-37-9P**, **Nitrogen**, uses 12031-63-9P, Lithium **niobium oxide** linbo3 12031-66-2P, Lithium **tantalum oxide** litao3
RL: NUU (Other use, unclassified); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(prepn. of solid **electrolyte** for lithium rechargeable batteries)
IT 685528-55-6P, Lithium tantalum nitride oxide (Li0.75TaN0.5O2.1) 685528-56-7P, Lithium niobium tantalum nitride oxide (Li0.8Nb0.1Ta0.9N0.55O2.1) 685528-57-8P, Lithium niobium tantalum nitride oxide (Li0.76Nb0.19Ta0.81N0.53O2.1) 685528-58-9P, Lithium niobium tantalum nitride oxide (Li0.85Nb0.33Ta0.67N0.49O2.2) 685528-59-0P, Lithium niobium tantalum nitride oxide (Li0.77Nb0.39Ta0.61N0.51O2.1) 685528-60-3P, Lithium niobium tantalum nitride oxide (Li0.69Nb0.53Ta0.47N0.52O2.1) 685528-61-4P, Lithium niobium tantalum nitride oxide (Li0.6Nb0.6Ta0.4N0.53O2) 685528-62-5P, Lithium niobium tantalum nitride oxide (Li0.67Nb0.71Ta0.29N0.54O2) 685528-63-6P, Lithium niobium tantalum nitride oxide (Li0.72Nb0.82Ta0.18N0.6O2) 685528-64-7P, Lithium niobium tantalum nitride oxide (Li0.77Nb0.89Ta0.11N0.67O1.9) 685528-65-8P, Lithium niobium tantalum nitride oxide (Li0.8Nb0.95Ta0.05N0.66O1.9) 685528-66-9P, Lithium niobium nitride oxide (Li0.91NbN0.61O2) 685528-67-0P, Lithium niobium tantalum nitride oxide (Li0.68Nb0.71Ta0.29N0.06O2.8) 685528-68-1P, Lithium niobium tantalum nitride oxide (Li0.68Nb0.71Ta0.29N0.12O2.7) 685528-69-2P, Lithium niobium tantalum nitride oxide (Li0.7Nb0.82Ta0.18N0.36O2.3) 685528-70-5P, Lithium niobium

tantalum nitride oxide (Li0.75Nb0.89Ta0.11N0.82O1.6) 685528-71-6P, Lithium niobium tantalum nitride oxide (Li0.79Nb0.95Ta0.05N1.1O1.2) 685528-72-7P, Lithium niobium tantalum nitride oxide (Li0.85Nb0.75Ta0.25N1.5O0.7)
RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(prepn. of solid **electrolyte** for lithium rechargeable batteries)

L13 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:408230 HCAPLUS
DOCUMENT NUMBER: 140:409629
TITLE: Method of fabrication of lithium polymer energy storage systems
INVENTOR(S): Naarmann, Herbert; Kruger, Franz Josef
PATENT ASSIGNEE(S): Gaia Akkumulatorenwerke G.m.b.H., Germany
SOURCE: Ger. Offen., 14 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10251238	A1	20040519	DE 2002-10251238	20021104
WO 2004042858	A2	20040521	WO 2003-EP12241	20031103
WO 2004042858	A3	20050127		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003279344	A1	20040607	AU 2003-279344	20031103
EP 1652261	A2	20060503	EP 2003-772294	20031103
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK				

PRIORITY APPLN. INFO.:
DE 2002-10251238 A 20021104
WO 2003-EP12241 W 20031103

OTHER SOURCE(S): MARPAT 140:409629
AB A new procedure for the prodn. of a lithium polymer energy storage system is disclosed. The energy storage systems so produced have an active cathode mass, a polymer **electrolyte** separator and an active anode mass. The active electrode masses are mixed with

conducting salts and optionally conducting salt additives and/or solvents, ground intensively, the active electrode masses subsequently formed with polymer binders to batches, extruded and laminated on a current collector. The laminated electrode masses are laminated sep. optionally with laminated separator in sandwich layer and are joined together, so that the active electrode masses have porous structure. The present invention creates a targeted and orderly arrangement and allocation of the active electrode components with optimized effectiveness, as compared to the conventional procedures where the resp. components of the electrode masses are present randomly distributed only according to the coincidence principle.

IT **7631-86-9, Silica**, uses
RL: MOA (Modifier or additive use); USES (Uses)
(method of fabrication of lithium polymer energy storage systems)

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

IT **7727-37-9, Nitrogen**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(method of fabrication of lithium polymer energy storage systems)

RN 7727-37-9 HCAPLUS

CN Nitrogen (8CI, 9CI) (CA INDEX NAME)

IC ICM H01M004-04
ICS H01M004-48; H01M010-04; H01M010-40

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 76

IT 7429-90-5, Aluminum, uses 7439-93-2D, Lithium, org. borate 7440-50-8, Copper, uses 7782-42-5, Graphite, uses 7791-03-9, Lithium perchlorate 9033-83-4, Polyphenylene 11126-15-1, Lithium vanadium oxide 12627-14-4, Lithium silicate 13453-69-5, Lithium metaborate 14283-07-9, Lithium tetrafluoroborate 18115-70-3, Lithium acetylacetonate, uses 21324-40-3, Lithium hexafluorophosphate 25067-58-7, Polyacetylene 33454-82-9, Lithium triflate 37296-91-6, Lithium molybdenum oxide 37349-20-5, Lithium **tungsten oxide** 39300-70-4, Lithium nickel oxide 39302-37-9, Lithium titanium oxide 39457-42-6, Lithium manganese oxide 51177-06-1, Chromium **lithium oxide** 51222-70-9, Lithium zirconium oxide 52627-24-4, Cobalt **Lithium oxide** 90076-65-6, Lithium bis(trifluoromethylsulfonyl) imide
RL: DEV (Device component use); USES (Uses)
(method of fabrication of lithium polymer energy storage systems)

IT 57-13-6, Urea, uses 79-41-4D, Methacrylic acid, fluoroalkyl ester 463-79-6D, Carbonic acid, alkyl ester 1304-28-5, Barium oxide (BaO), uses 1309-48-4, Magnesium oxide (MgO), uses 1344-28-1, Alumina, uses **7631-86-9, Silica**, uses 9002-88-4, Polyethylene 9003-19-4, Polyvinyl ether 9003-29-6, Polybutene 9003-53-6, Polystyrene 24968-97-6, Polypyrrolidone 25038-32-8, Isoprene-styrene copolymer 25190-89-0, Hexafluoropropylene-tetrafluoroethylene-vinylidene fluoride copolymer 26602-62-0, Butadiene-Isoprene-styrene copolymer
RL: MOA (Modifier or additive use); USES (Uses)
(method of fabrication of lithium polymer energy storage systems)

IT **7727-37-9, Nitrogen**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(method of fabrication of lithium polymer energy storage systems)

L13 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:582740 HCAPLUS
DOCUMENT NUMBER: 139:137073
TITLE: Production of porous structure containing functional compound fine particles dispersed in overall position
INVENTOR(S): Yamauchi, Goro; Nakajima, Hideo; Taira, Hirohito; Mabuchi, Mamoru
PATENT ASSIGNEE(S): Japan Science and Technology Corporation, Japan; National Institute of Advanced Industrial Science and Technology
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003213352	A2	20030730	JP 2002-17453	20020125
PRIORITY APPLN. INFO.:			JP 2002-17453	20020125

AB The title porous structure is composed of a matrix made of an element Y, and dispersed fine particles made of a X-Z compd. (X = element showing gaseous phase at an ordinary temp., Z = element showing high affinity with X). The porous structure is produced by heating a porous material (porosity 0.1-95.0%) made of Y contg. 0.00001-70 at.% of Z in an atm. contg. X with partial pressure capable of forming the X-Z compd. but insufficient for forming a Y-X compd., to ppt. the X-Z compd. in the form of grains or plate-like in overall position of the porous material. OO X Si,Mn,P,Al,Zn,Ti,Ni,Cr,Co,Fe,Be,Mg;Cd,In,Zr,Sn,Ce,Ca,Ga,B,Sb,Tl,Pb,Nb,Ta,Bi,Li,Mo,W,V,Pb.Hf 1 2 Z Z Ag,Cu,Ni,Fe,Pd,Co,Au,Pt,Cr,Mo,W,Ti,Zr,Hf,V,Nb,Ta,Ge,Sn,Pb 1 2 Y. NN X Ti,Zr,Al,Fe,Cr,Mo,V,Si 1 2 Z Z Ag,Cu,Ni,Fe,Pd,Co,Au,Pt,Cr,Mo,W 1 2 Y. FF X Be,Mg,Ca,Al,Ti,Si,Cr 1 2 Z Z Ag,Cu,Ni,Fe,Pd,Co,Au,Pt,Cr,Mo,W,Ti,Zr 1 2 Y. HH X La,Ca,Li,Ti,K,Na,U,Mg,Ni,Co,V,Fe,Mn,Ce,Al,Y,Zr 1 2 Z Z Ag,Cu,Ni,Fe,Pd,Co,Au,Pt,Cr,Mo,W,Ti,Zr,Mg 1 2 Y. Thus, a porous Ni-Ti alloy embedded in powder mixt. of Ni oxide, Ni, and Al2O3, and heated in Ar to give a porous structure contg. anatase-type photocatalytic TiO2 particles and rutile-type TiO2 particles.

IT **7727-37-9, Nitrogen**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(atm.; in prodn. of porous structure contg. functional compd. fine particles dispersed in overall position)
RN 7727-37-9 HCAPLUS
CN Nitrogen (8CI, 9CI) (CA INDEX NAME)

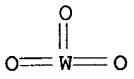
IT **1313-96-8P, Niobium oxide**
1314-35-8P, Tungsten oxide, preparation

7631-86-9P, Silica, preparation
12057-24-8P, Lithium oxide, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pptd. fine particles; prodn. of porous structure contg. functional compd. fine particles dispersed in overall position)

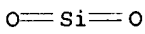
RN 1313-96-8 HCAPLUS
CN Niobium oxide (Nb2O5) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

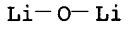
RN 1314-35-8 HCAPLUS
CN Tungsten oxide (WO3) (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 12057-24-8 HCAPLUS
CN Lithium oxide (Li2O) (8CI, 9CI) (CA INDEX NAME)



IC ICM C22C001-08
ICS C22C032-00
CC 56-4 (Nonferrous Metals and Alloys)
Section cross-reference(s): **52**, 59, 74
IT 1333-74-0, Hydrogen, reactions **7727-37-9, Nitrogen**, reactions 7782-41-4, Fluorine, reactions 7782-44-7, Oxygen, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(atm.; in prodn. of porous structure contg. functional compd. fine particles dispersed in overall position)
IT 1303-86-2P, Boron oxide, preparation 1304-56-9P, Beryllium oxide, preparation 1304-76-3P, Bismuth oxide, preparation 1305-78-8P, Calcium oxide, preparation 1306-19-0P, Cadmium oxide, preparation 1308-38-9P, Chromia, preparation 1309-48-4P, Magnesium oxide, preparation 1312-43-2P, Indium oxide **1313-96-8P, Niobium oxide** 1313-99-1P, Nickel oxide, preparation 1314-13-2P, Zinc oxide, preparation 1314-23-4P, Zirconium oxide, preparation **1314-35-8P, Tungsten oxide**, preparation 1314-56-3P, Phosphorus oxide, preparation 1314-61-0P, **Tantalum oxide** 1327-33-9P, Antimony oxide 1332-29-2P, Tin oxide 1332-37-2P, Iron oxide, preparation 1335-25-7P, Lead oxide 1344-28-1P, Alumina, preparation 7580-67-8P, Lithium hydride **7631-86-9P, Silica**, preparation 7646-69-7P, Sodium hydride 7693-26-7P, Potassium hydride 7693-27-8P, Magnesium hydride 7704-99-6P, Zirconium hydride 7783-40-6P, Magnesium fluoride 7784-18-1P, Aluminum fluoride 7784-21-6P, Aluminum hydride 7787-49-7P, Beryllium fluoride 7789-75-5P, Calcium fluoride, preparation 7789-78-8P, Calcium hydride 11098-99-0P, Molybdenum oxide 11099-11-9P, Vanadium oxide 11104-61-3P, Cobalt oxide 11113-56-7P, Chromium fluoride 11115-94-9P, Lanthanum hydride 11129-18-3P, Cerium oxide 11129-60-5P, Manganese oxide 11140-68-4P, Titanium hydride

12024-21-4P, Gallium oxide 12033-89-5P, Silicon nitride, preparation 12055-23-1P, Hafnium oxide **12057-24-8P**, **Lithium oxide**, preparation 12643-00-4P, Cerium hydride 12651-21-7P, Thallium oxide 12656-23-4P, Yttrium hydride 12674-04-3P, Vanadium nitride 12705-37-2P, Chromium nitride 12713-06-3P, Vanadium hydride 13463-67-7P, Titania, preparation 24304-00-5P, Aluminum nitride 25583-20-4P, Titanium nitride 25658-42-8P, Zirconium nitride 37187-84-1P, Nickel hydride 37245-77-5P, Iron nitride 37245-81-1P, Molybdenum nitride 51142-88-2P, Titanium fluoride 51680-55-8P, Uranium hydride 57571-85-4P, Manganese hydride 61229-82-1P, Cobalt hydride 64296-66-8P, Iron hydride
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pptd. fine particles; prodn. of porous structure contg. functional compd. fine particles dispersed in overall position)

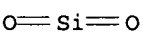
L13 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:90544 HCAPLUS
DOCUMENT NUMBER: 136:137424
TITLE: Fabrication of lithium anodes and batteries
INVENTOR(S): Skotheim, Terje A.; Sheehan, Christopher J.; Mikhaylik, Yuriy V.; Affinito, John
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 22 pp., Cont.-in-part of U.S. Ser. No. 721,578.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002012846	A1	20020131	US 2001-864890	200105 23
US 6733924	B1	20040511	US 2000-721519	200011 21
US 6797428	B1	20040928	US 2000-721578	200011 21
CN 1728418	A	20060201	CN 2005-10079023	200011 21
WO 2002095849	A2	20021128	WO 2002-US16649	200205 23
WO 2002095849	A3	20031204		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002312067	A1	20021203	AU 2002-312067	200205 23
EP 1407505	A2	20040414	EP 2002-739419	200205

					23
EP 1407505	B1	20050803			
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR					
CN 1511351	A	20040707	CN 2002-810473		200205 23
JP 2004527888	T2	20040909	JP 2002-592213		200205 23
US 2005008935	A1	20050113	US 2004-913839		200408 06
US 6936381	B2	20050830			
PRIORITY APPLN. INFO.:			US 1999-167171P	P	199911 23
			US 2000-721519	A2	200011 21
			US 2000-721578	A2	200011 21
			CN 2000-818169	A3	200011 21
			US 2001-864890	A	200105 23
			WO 2002-US16649	W	200205 23

AB Provided is an anode for use in electrochem. cells, wherein the anode active layer has a first layer comprising lithium metal and a multi-layer structure comprising single ion conducting layers and polymer layers in contact with the first layer comprising lithium metal or in contact with an intermediate protective layer, such as a temporary protective metal layer, on the surface of the lithium-contg. first layer. Another aspect of the invention provides an anode active layer formed by the in-situ deposition of lithium vapor and a reactive gas. The anodes of the current invention are particularly useful in electrochem. cells comprising sulfur-contg. cathode active materials, such as elemental sulfur.

IT **7631-86-9**, Fumed **silica**, uses
RL: MOA (Modifier or additive use); USES (Uses)
(colloidal; fabrication of lithium anodes and batteries)
RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT **7727-37-9**, **Nitrogen**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(fabrication of lithium anodes and batteries)
RN 7727-37-9 HCAPLUS
CN Nitrogen (8CI, 9CI) (CA INDEX NAME)

IC H01M004-40; H01M004-66; B05D005-12
INCL 429231950
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
IT **7631-86-9**, Fumed **silica**, uses
RL: MOA (Modifier or additive use); USES (Uses)
(colloidal; fabrication of lithium anodes and batteries)
IT 110-71-4 646-06-0, 1,3-Dioxolane 1344-28-1, Dispal 11N7-12, uses 7439-93-2, Lithium, uses 7704-34-9, Sulfur, uses 12031-63-9, Lithium **niobium oxide** (LiNbO3) 12769-51-6, Lithium **tantalum oxide** 37220-89-6, Lithium aluminate 39302-37-9, Lithium titanium oxide 90076-65-6, Lithium bis(trifluoromethylsulfonyl)imide 152747-89-2, Lanthanum **lithium oxide** 184905-46-2, Lithium **nitrogen** phosphorus oxide 236388-73-1, Lithium silicide sulfide 236388-74-2, Lithium boride sulfide 236388-75-3, Aluminum lithium sulfide 342379-43-5, Germanium lithium sulfide
RL: DEV (Device component use); USES (Uses)
(fabrication of lithium anodes and batteries)
IT 74-85-1, Ethylene, uses 74-86-2, Acetylene, uses 124-38-9, Carbon dioxide, uses 7440-50-8, Copper, uses 7446-09-5, Sulfur dioxide, uses **7727-37-9**, **Nitrogen**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(fabrication of lithium anodes and batteries)

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